

LIITELUETTELO

Näpäytä hiirellä haluamaasi liitettä siirtyäksesi sen alkuun.

- LIITE I Yhteenveto painumien arvioimisesta painumapotentiaalimenetelmällä
- LIITE II Murron koepenger 36 s.
- LIITE III Haarajoen koepenger 48 s.
- LIITE IV Vaasan koepenger 27 s.
- LIITE V Paimion koepenger 21 s.
- LIITE VI Keravan veturitalli 15 s.
- LIITE VI b Keravan kääntölava 15 s.
- LIITE VII Naantali-Turku Mt 189 12 s.
- LIITE VIII Leteensuon koetie 18 s.
- LIITE IX Vanhankaupungin lahti 27 s
- LIITE X Itäkeskuksen päiväkotia 30 s.
- LIITE XI Pikku-Huopalahti, Tilkan stabilointi 24 s.
- LIITE XII Pikku-Huopalahti, Korppaanmäentie 12 s.

Liite I ja liitteen II 15 ensimmäistä sivua on sisällytetty myös painettuun julkaisuun (LÄNSIVAARA, TIM: *Painuman ennustaminen painumahavaintojen perusteella* Helsinki 2001, Tiehallinnon selvityksiä 49/2001).

Yhteenveto painumien arvioimisesta painumapotentialimenetelmällä

1. Laske painumapotentialin S_p arvo havaitusta aika-painuma käyttäytymisestä.

$$S_p = \dot{\mathbf{d}} t = \frac{\Delta \mathbf{d}}{\Delta t} \cdot t$$

2. Painumapotentialin ja sitä vastaavan painuman yhtälöt ovat:

Paraabelimenetelmä

$$S_p = \begin{cases} S_{p0} \cdot \sqrt{\frac{t}{t_{50}}} & t \leq t_{50} \\ S_{p0} & t > t_{50} \end{cases}$$

$$\mathbf{d} = \begin{cases} \mathbf{d}_0 + \frac{2 \cdot S_{p0}}{\sqrt{t_{50}}} (\sqrt{t} - \sqrt{t_0}) & t \leq t_{50} \\ \mathbf{d}_0 + 2 \cdot S_{p0} \left(1 - \frac{\sqrt{t_0}}{\sqrt{t_{50}}}\right) + S_{p0} \ln\left(\frac{t}{t_{50}}\right) & t > t_{50} \end{cases}$$

missä S_{p0} = painumapotentialin vakioarvo.
 t = aika
 t_{50} = 50 % konsolidaatioasteen saavuttamiseen kuluva aika
 t_0 = alkupainuman kuluva aika
 \mathbf{d} = alkupainuma

Hyperbelimenetelmä

$$S_p = \frac{t}{a + b \cdot t}$$

$$\mathbf{d} = \mathbf{d}_0 + \frac{1}{b} (\ln(a + b \cdot t) - \ln(a + b \cdot t_0))$$

missä a = alkupainumanopeuden käänneisluku
 b = painumapotentialin maksimiaron käänneisluku

3. Parametrien arviointi

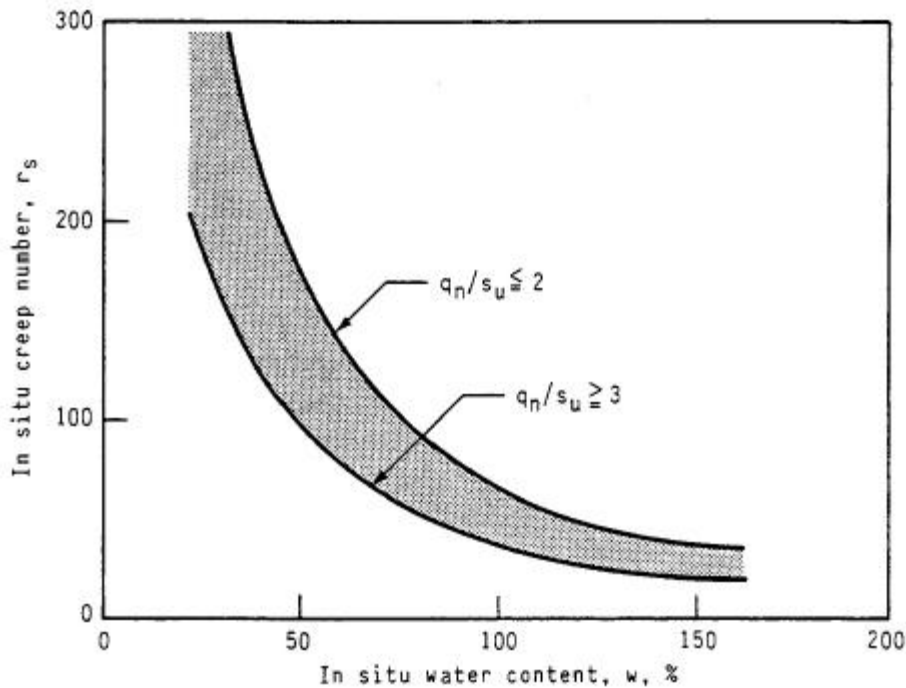
Painumapotentialin loppuarvo

$$S_{p0} = 1/4 \mathbf{d}_p$$

tai

$$S_{p0} = \sum_1^n \frac{\Delta H}{r_s}$$

missä d = laskettu primaaripainuma
 H = kerrospaksuus
 r_s = hiipumaluku, katso kuva L1.1



Kuva L1.1 Kenttähavainnon perusteella laskettu hiipumaluvun vaihteluväli vesipitoisuuden ja mobilisoituneen lujuuden funktiona (Janbu 1998).

$$r_s = \frac{1+e_0}{C_a} \ln 10$$

$$r_s = \frac{m}{B} \quad (\text{Länsivaara 1999})$$

missä m = moduuliluku kun $\beta = 0$
 B = muodonmuutosnopeusparametri

t_{50} , eli 50 % konsolidaatioasteen saavuttamiseen kuluva aika yhtälöstä

$$t_{50} = 0,091 \frac{H^2}{c_v} \quad , \text{ yksipuolinen kuivatus}$$

$$t_{50} = 0,049 \frac{H^2}{c_v} \quad , \text{ kaksipuolinen kuivatus}$$

missä c_v = kerroksen keskimääräinen konsolidaatiokerroin

Hyperbelimenetelmän parametri b , samoin kuin alkupainuma ja siihen kuluva aika mitattujen arvojen perusteella.

4. Sovita painuma- ja painumapotentialikäyrät havaittuihin arvoihin hyödyntäen tarvittaessa parametrien edellä esitettyjä riippuvaisuuksia ja tee näin saatujen lopullisten parametrien avulla tulevien painumien arviointi.
5. Laske lopullisten parametrien avulla kenttäarvot hiipumaluvulle sekä konsolidaatiokertoimelle.

$$r_s = \frac{H}{S_{p0}}$$

$$c_v = 0,091 \frac{H^2}{t_{50}} \quad , \text{ yksipuolinen kuivatus}$$

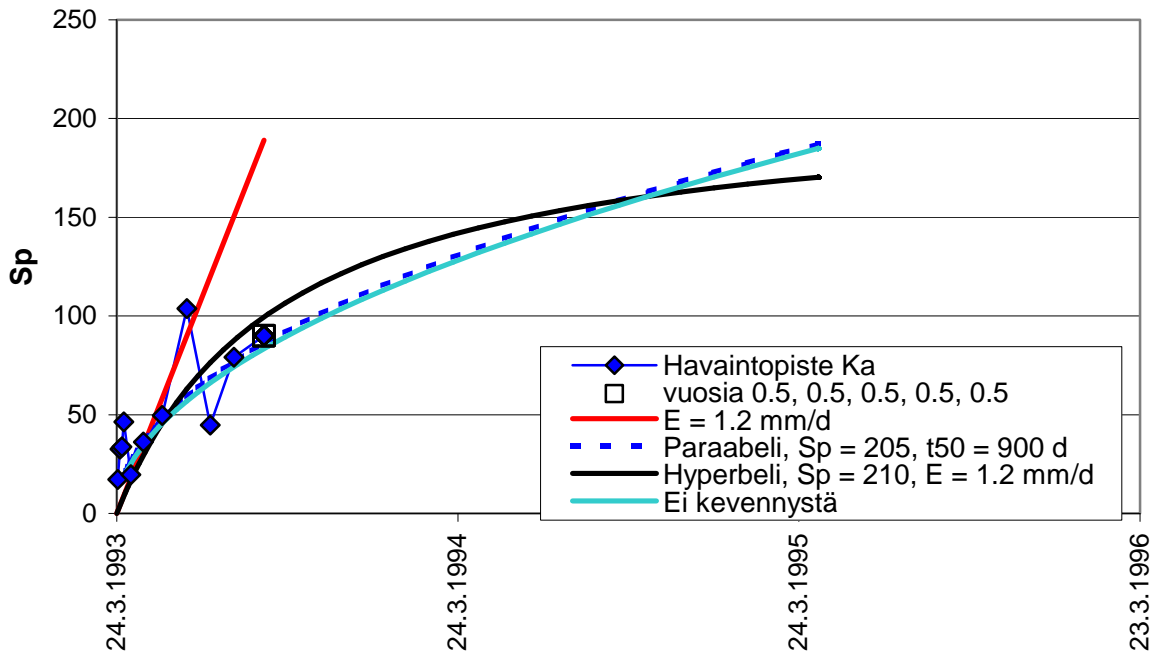
$$c_v = 0,049 \frac{H^2}{t_{50}} \quad , \text{ kaksipuolinen kuivatus}$$

Koepenger, Murro 6 kk havainnot

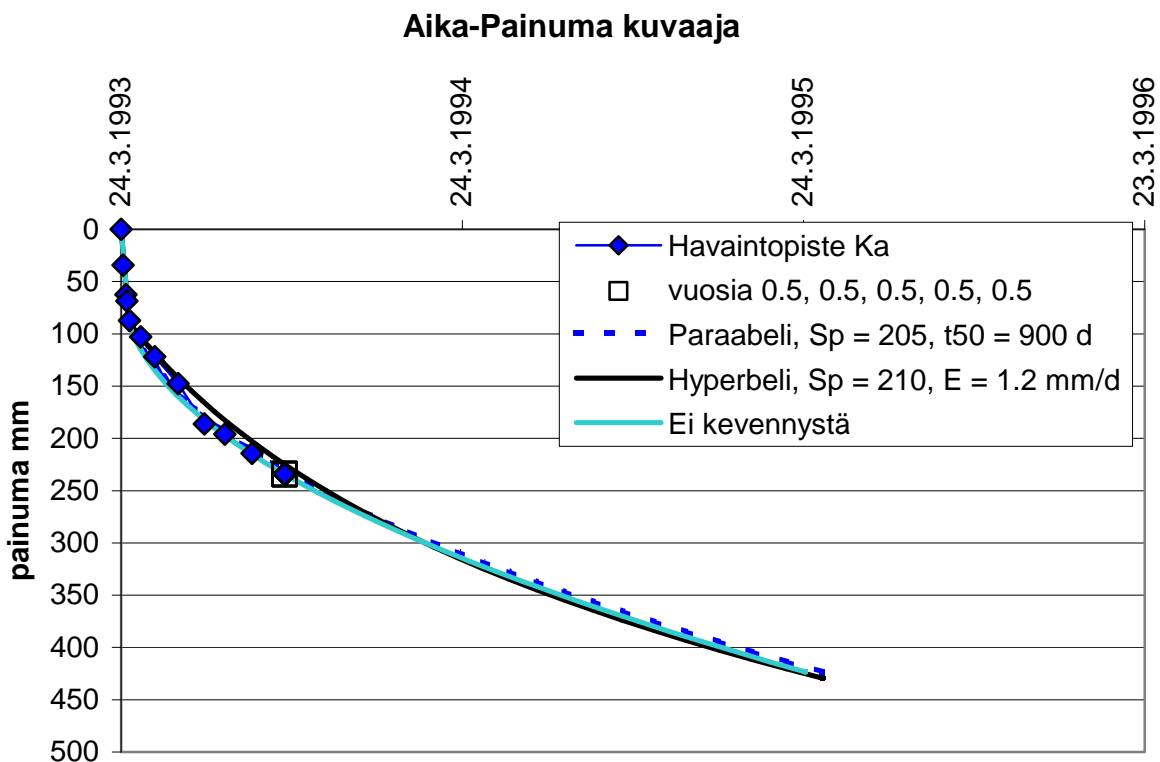
Havaintopiste Ka ▼

● 1-puol. kl	H	w	m (b = 0)	m	alkupai.	t0 (d)	pain. t (a)	tod. t
○ 2-puol. kl	21	65	8.3...14	7	90	9	7.4	7.4

input				80				
	Sp	t50/E	rs	B	c _v	pain. 7.4	virh. mm	
Paraabeli	205	900	102	0.068	16.3	684	ei havaint.	
Hyperbeli	210	1.20	100	0.070		667	ei havaint.	



Aika-Painumapotentialiaali kuvaaja

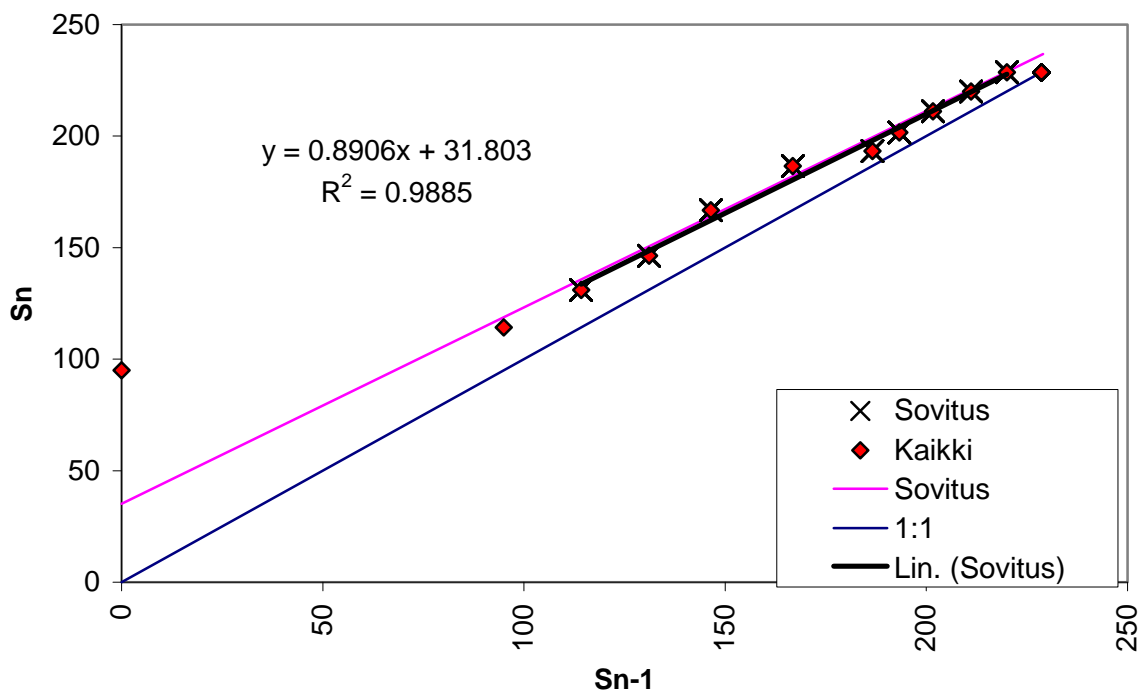


Aika-Painuma kuvaaja

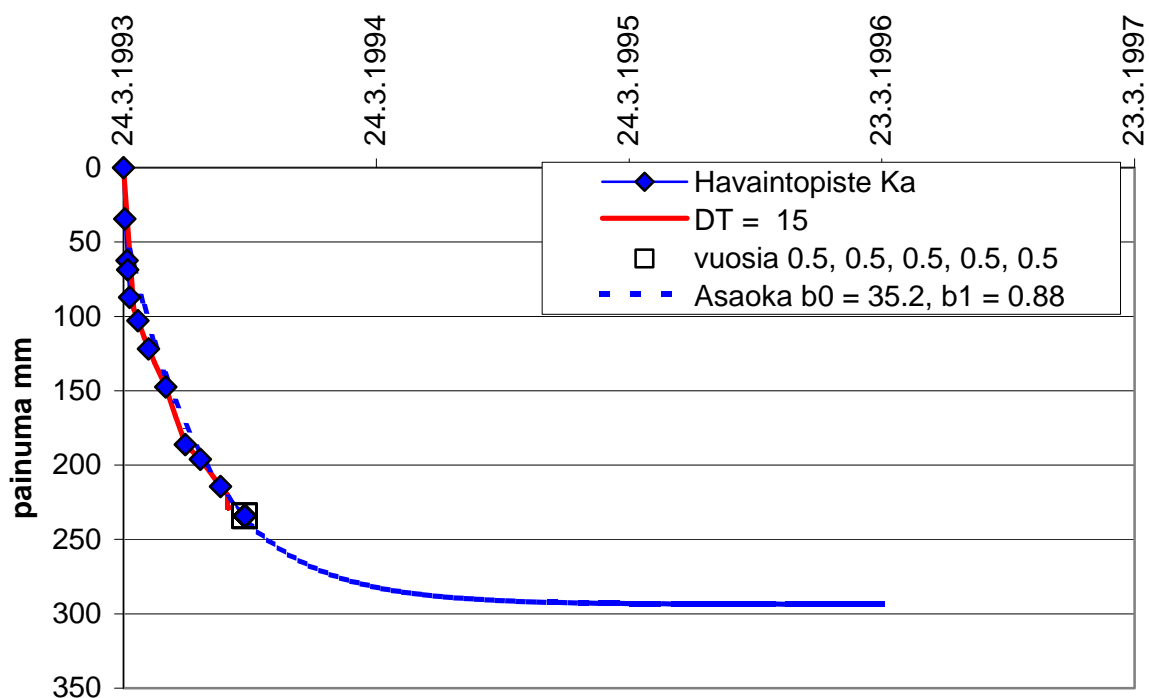


pain. t (a)	tod. t
7.4	7.4

input				output			
	β_0	β_1	t	Prim. Pain.		pain7.4	virh. mm
Asaoka	35.2	0.880	15.00	294		294	ei havaint.
	35.2	0.880	15.00				



Aika-Painuma kuvaaja





pain. t (a)

tod. t

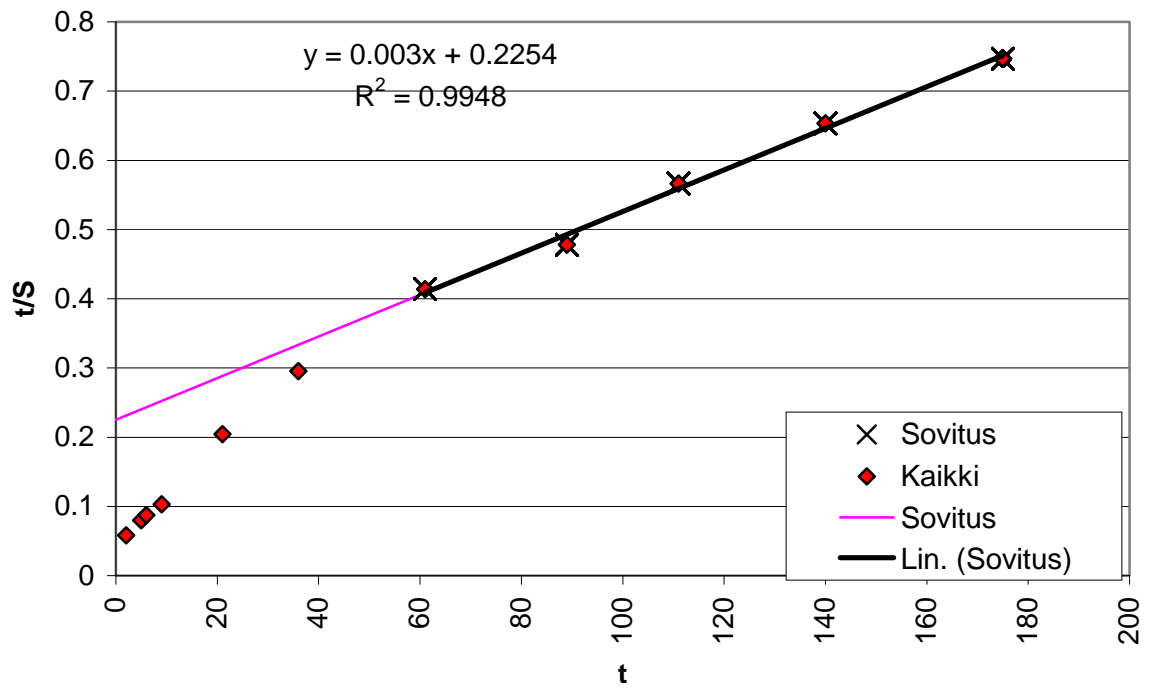
7.4

7.4

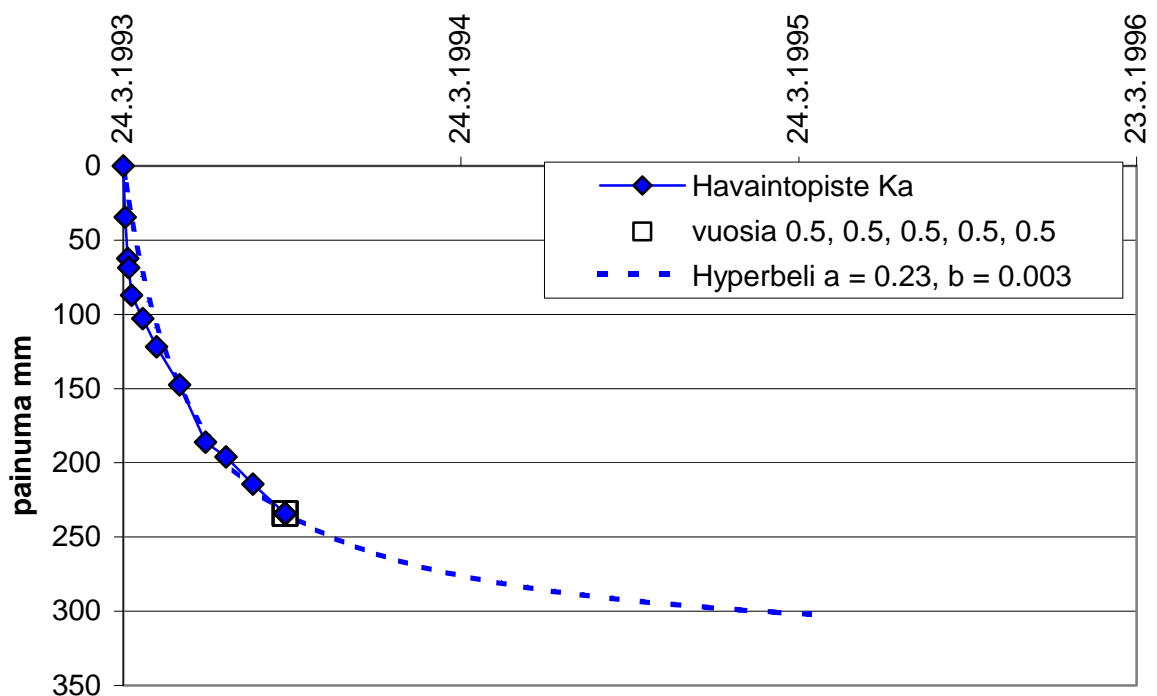
input

output

	a	b	Painuma	pain7.4	virh. mm
Hyperbeli	0.23	3.01E-03	333	324	ei havaint.



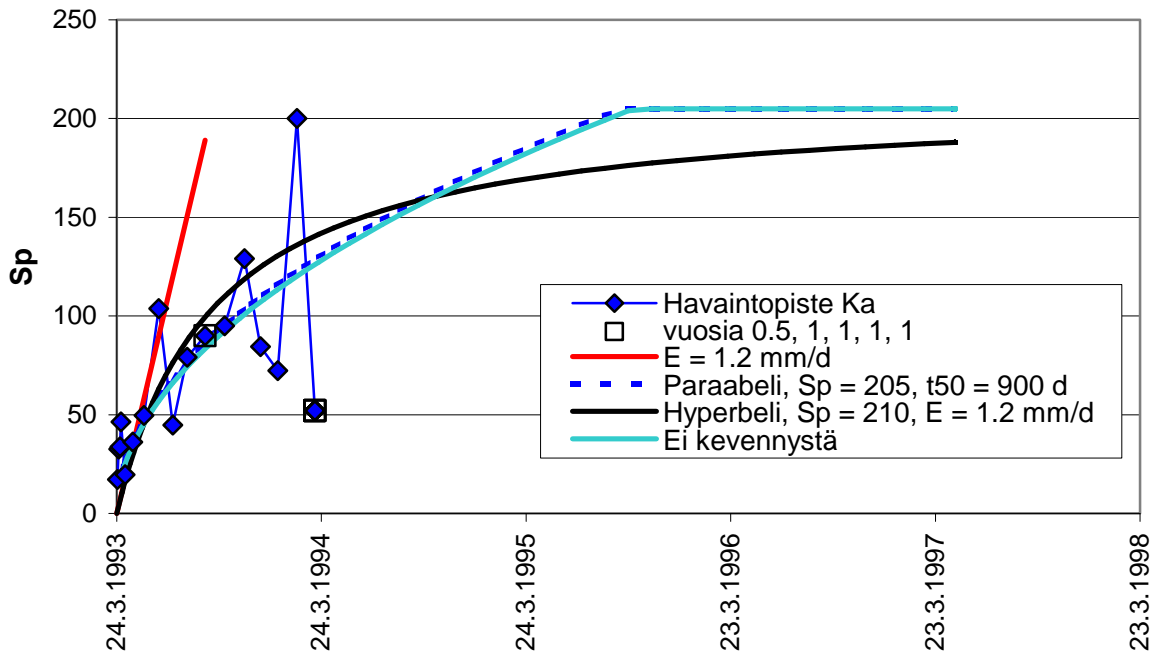
Aika-Painuma kuvaaja



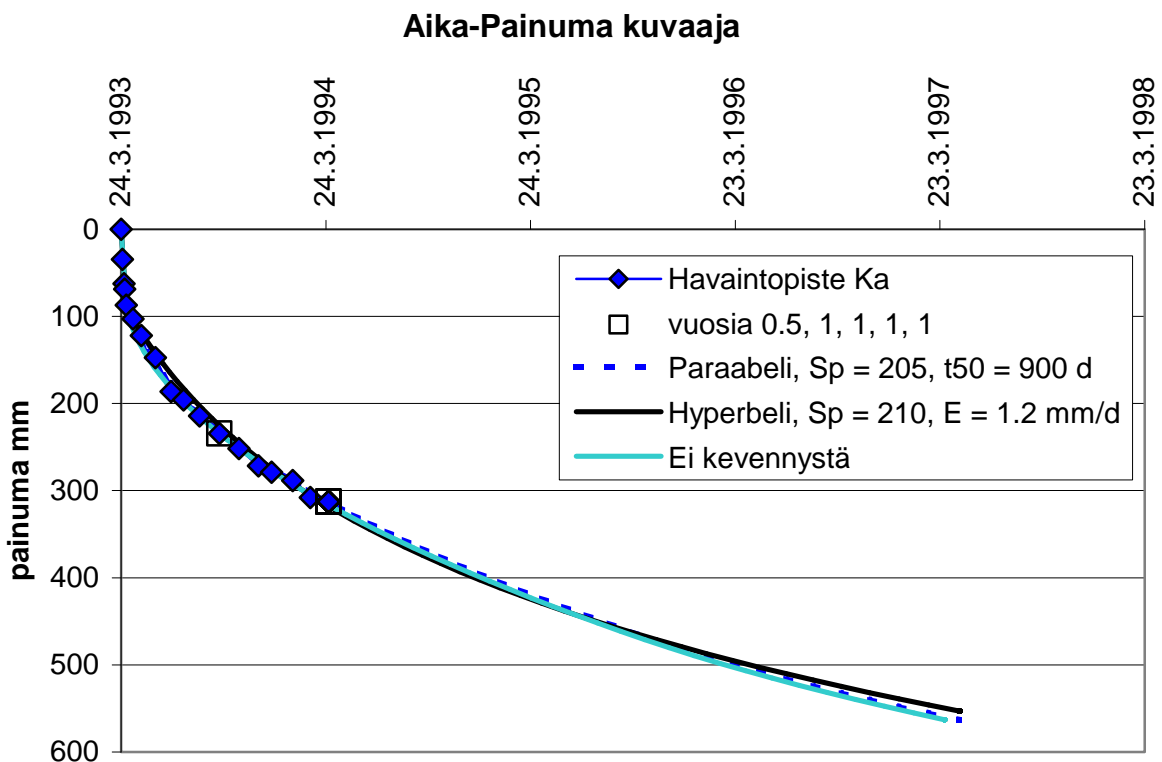
Koepenger, Murro 1 v havainnot

Havaintopiste Ka ▼

● 1-puol. kl	H	w	m (b = 0)	m	alkupai.	t0 (d)	pain. t (a)	tod. t
○ 2-puol. kl	21	65	8.3...14	7	90	9	7.4	7.4
input				80				
	Sp	t50/E	rs	B	c _v	pain. 7.4	virh. mm	
Paraabeli	205	900	102	0.068	16.3	684	ei havaint.	
Hyperbeli	210	1.20	100	0.070		667	ei havaint.	



Aika-Painumapotentiaali kuvaaja

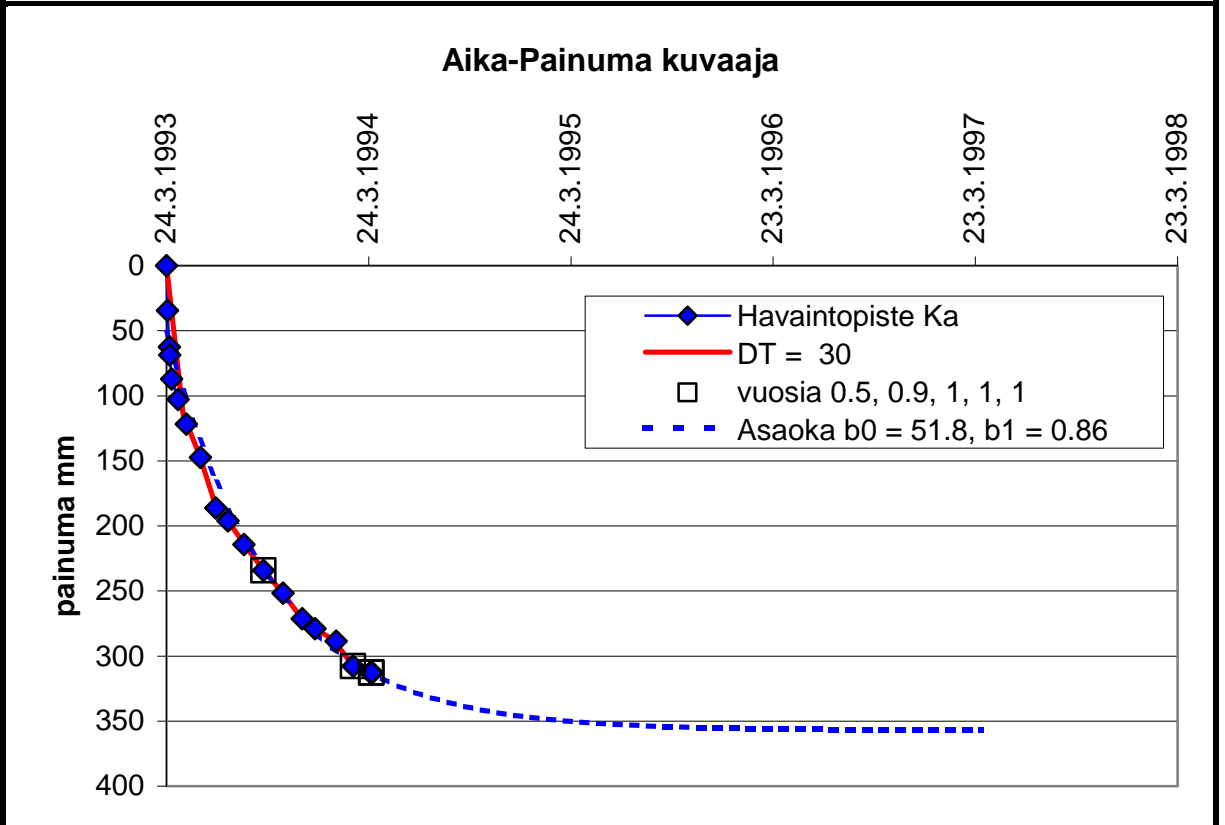
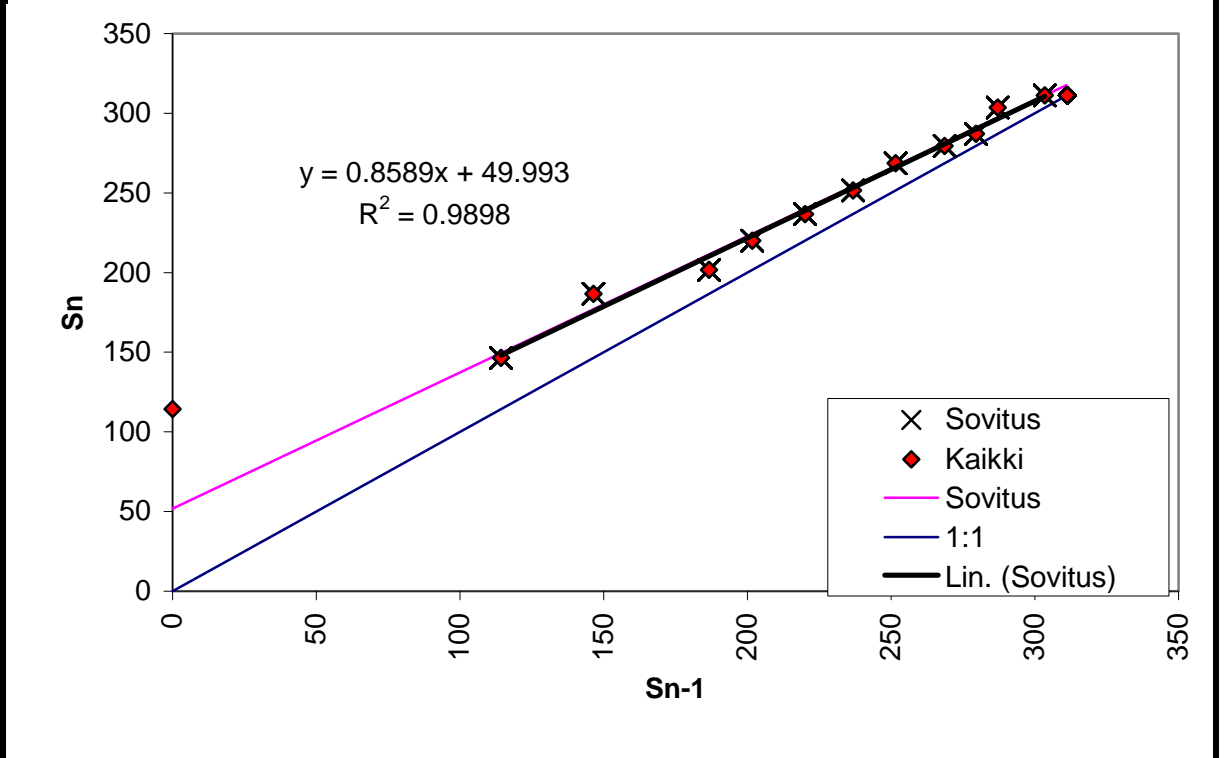


Aika-Painuma kuvaaja



pain. t (a)	tod. t
7.4	7.4

input				output			
	β_0	β_1	t	Prim. Pain.		pain7.4	virh. mm
Asaoka	51.8	0.855	30.00	357		357	ei havaint.
	51.8	0.855	30.00				





pain. t (a)

tod. t

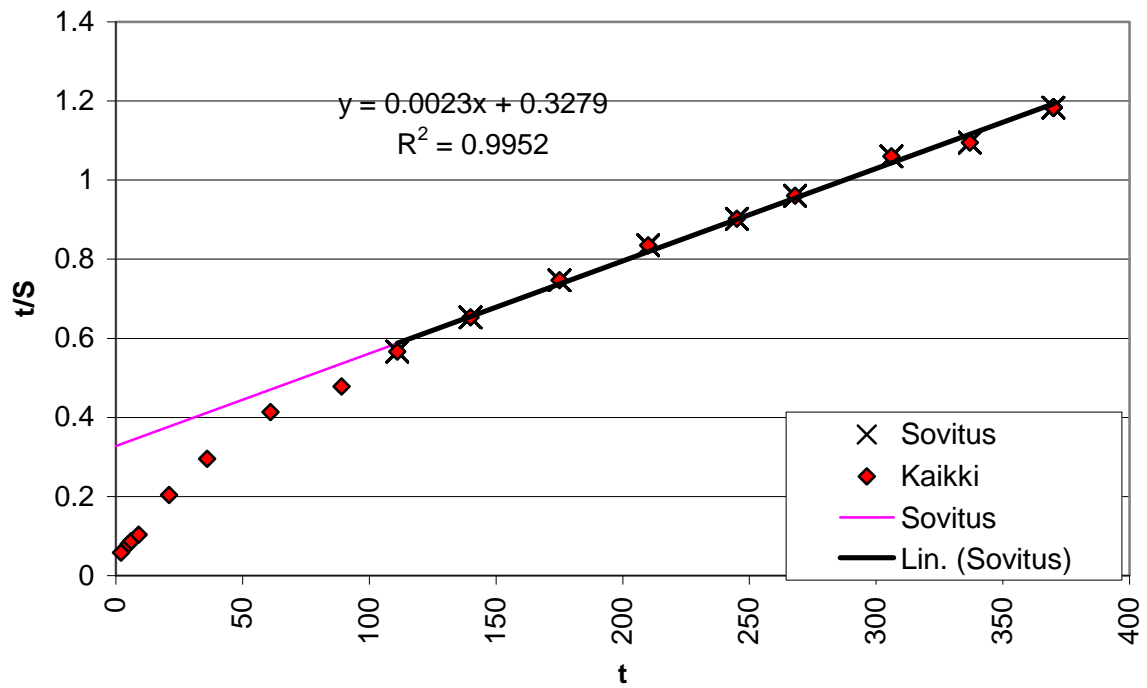
7.4

7.4

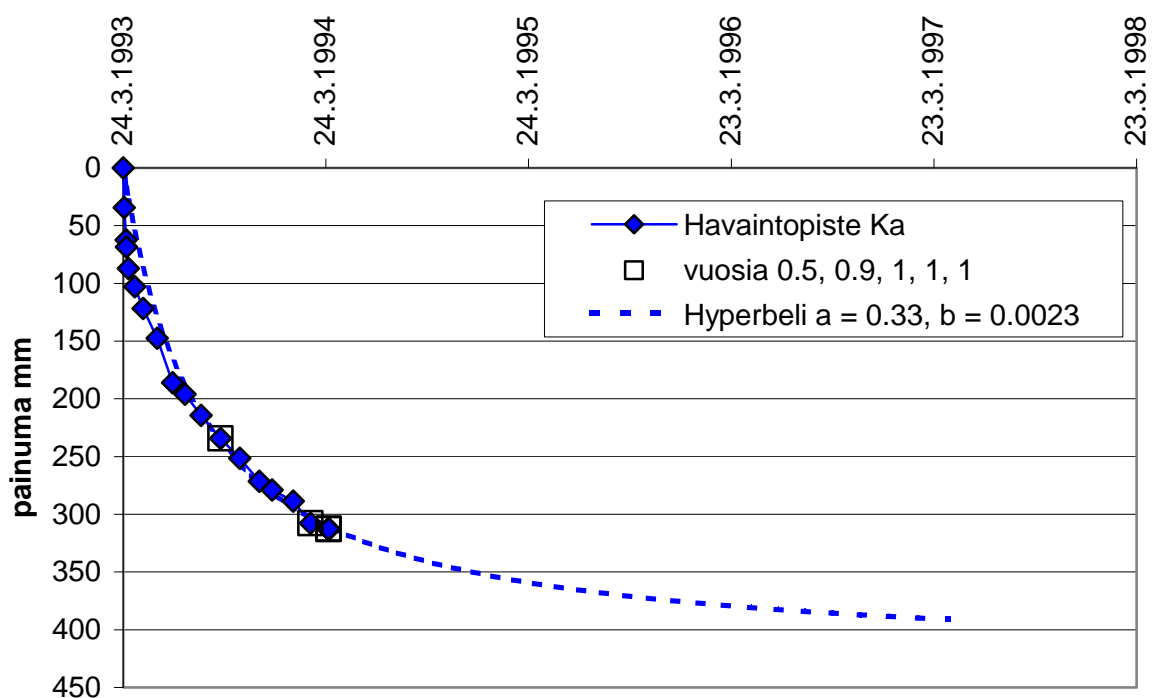
input

output

	a	b	Painuma	pain7.4	virh. mm
Hyperbeli	0.33	2.34E-03	428	407	ei havaint.



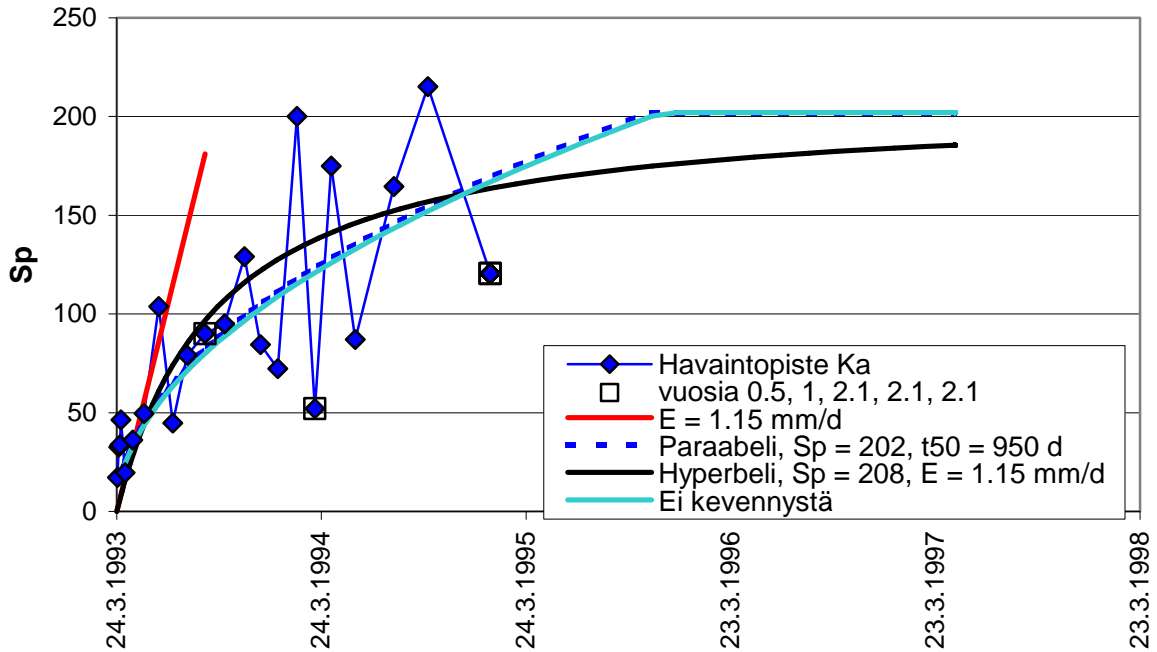
Aika-Painuma kuvaaja



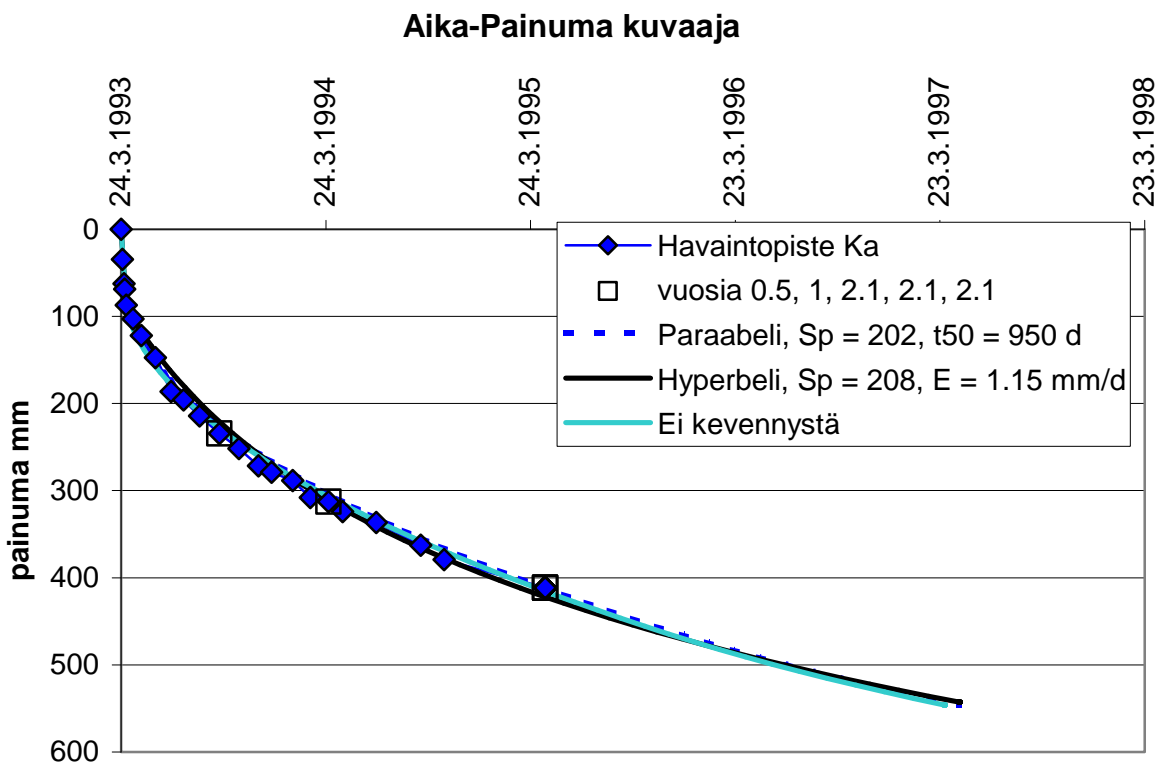
Koepenger, Murro 2 v havainnot

Havaintopiste Ka ▼

● 1-puol. kl	H	w	m (b = 0)	m	alkupai.	t0 (d)	pain. t (a)	tod. t
○ 2-puol. kl	21	65	8.3...14	7	90	9	7.4	7.4
input				80				
	Sp	t50/E	rs	B	c _v	pain. 7.4	virh. mm	
Paraabeli	202	950	104	0.067	15.4	666	ei havaint.	
Hyperbeli	208	1.15	101	0.069		656	ei havaint.	



Aika-Painumapotentialiaali kuvaaja

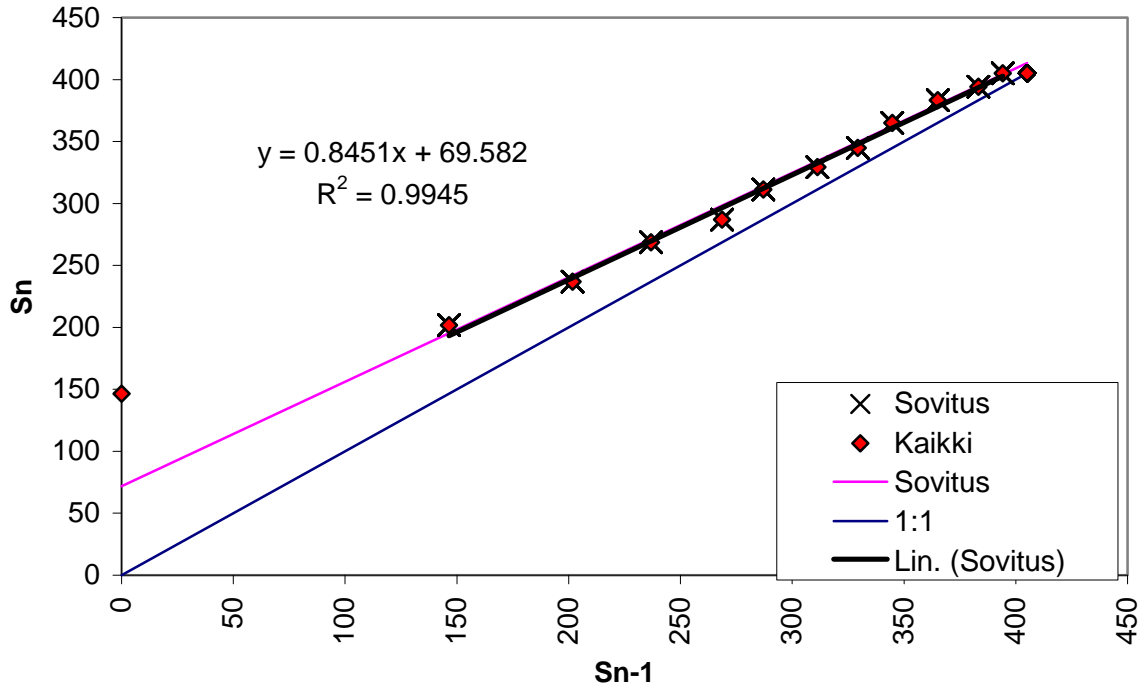


Aika-Painuma kuvaaja

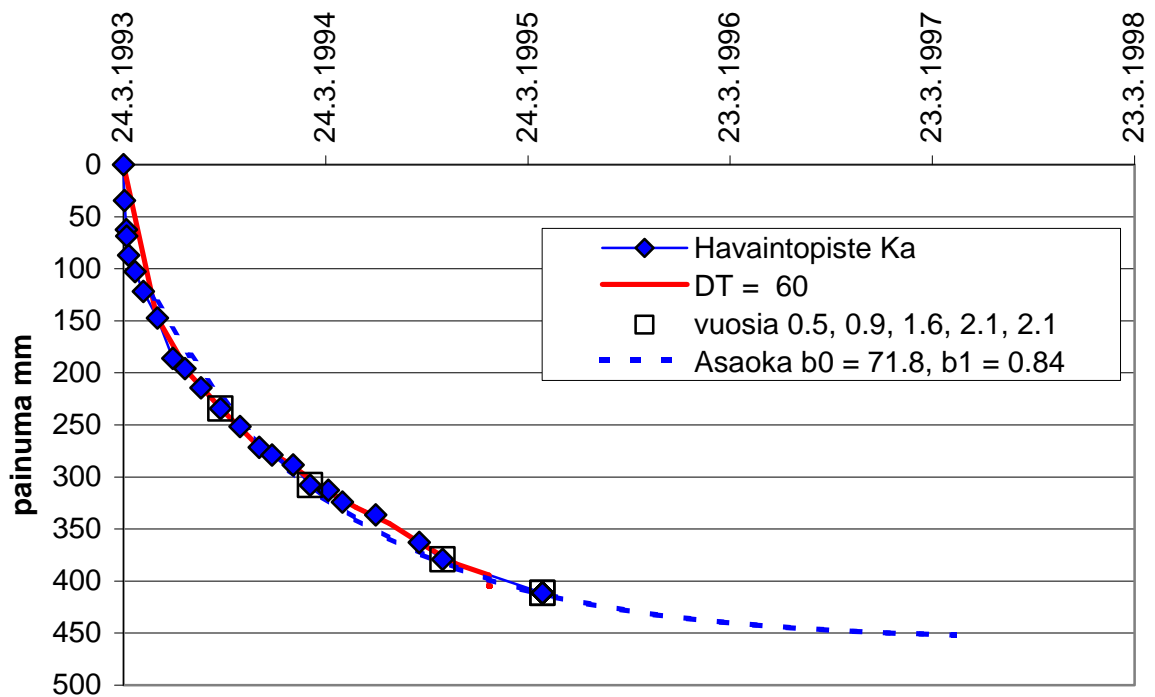


pain. t (a)	tod. t
7.4	7.4

input				output			
	β_0	β_1	t	Prim. Pain.		pain7.4	virh. mm
Asaoka	71.8	0.843	60.00	457		457	ei havaint.
	71.8	0.843	60.00				



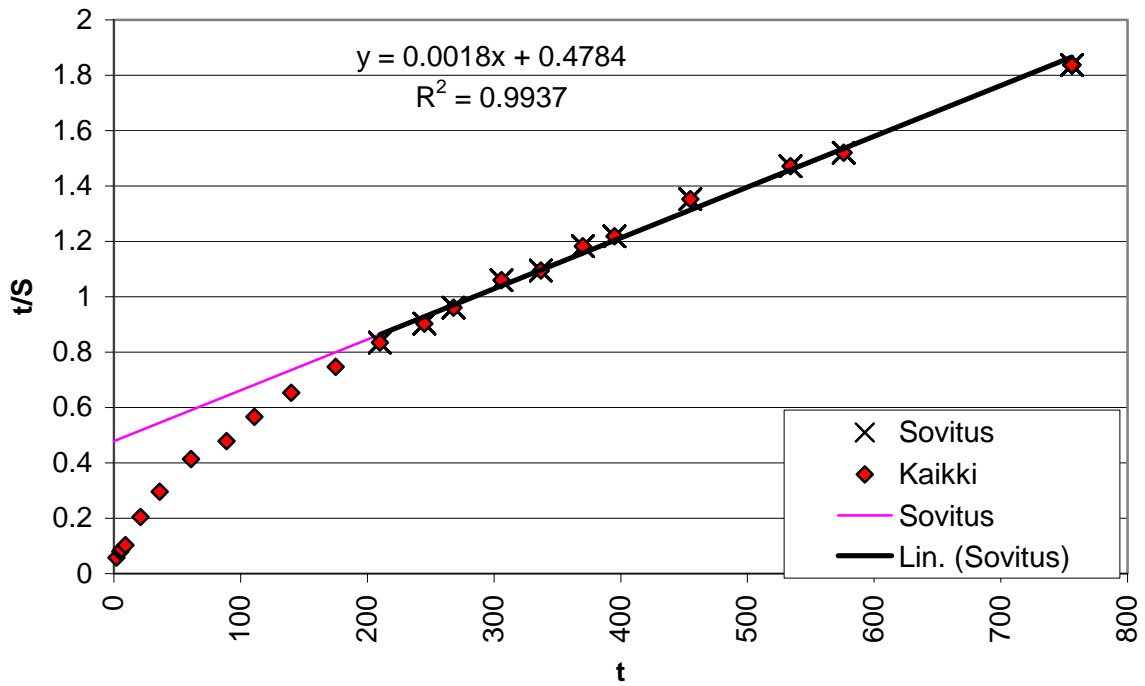
Aika-Painuma kuvaaja



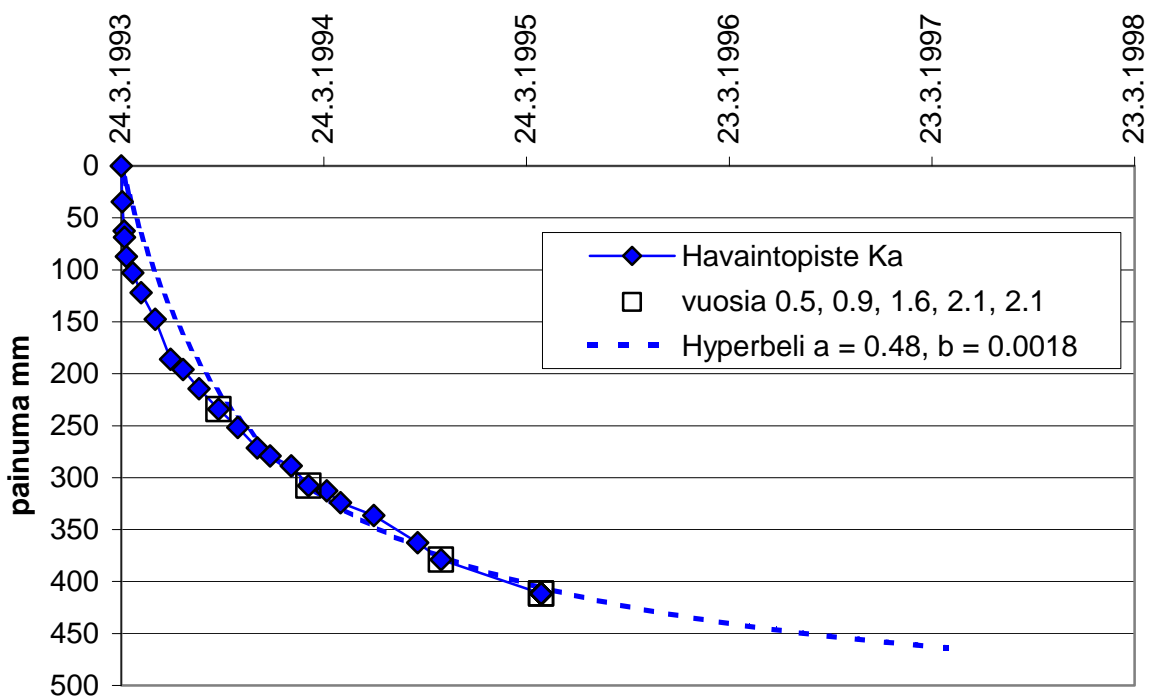


pain. t (a)	tod. t
7.4	7.4

input			output			
	a	b	Painuma		pain7.4	virh. mm
Hyperbeli	0.48	1.83E-03	545		497	ei havaint.



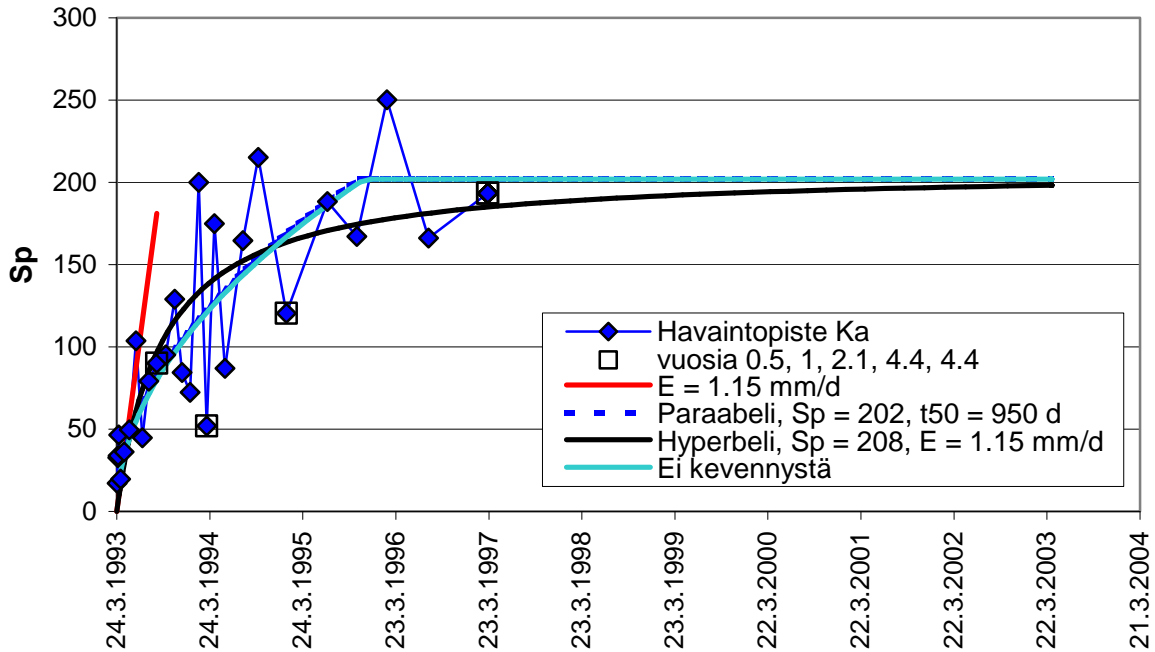
Aika-Painuma kuvaaja



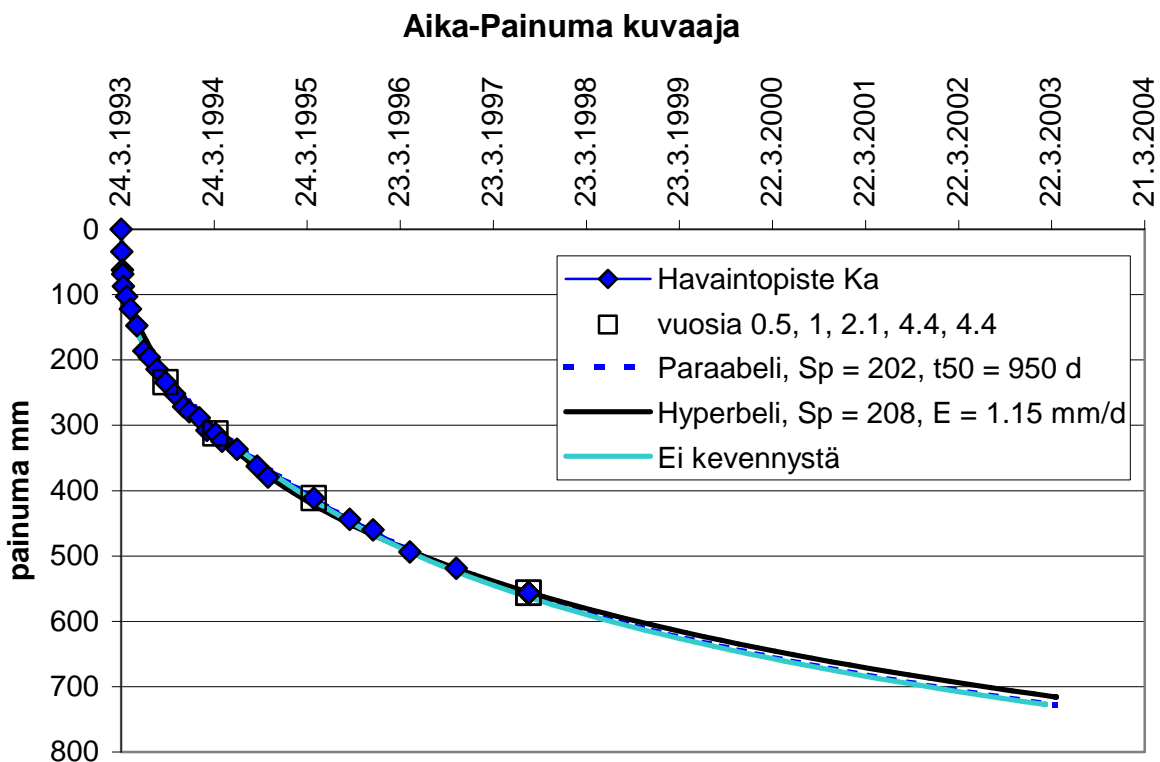
Koepenger, Murro 4 v havainnot

Havaintopiste Ka ▼

● 1-puol. kl	H	w	m (b = 0)	m	alkupai.	t0 (d)	pain. t (a)	tod. t
○ 2-puol. kl	21	65	8.3...14	7	90	9	7.4	7.4
input				80				
	Sp	t50/E	rs	B	c _v	pain. 7.4	virh. mm	
Paraabeli	202	950	104	0.067	15.4	666	ei havaint.	
Hyperbeli	208	1.15	101	0.069		656	ei havaint.	



Aika-Painumapotentialiaali kuvaaja

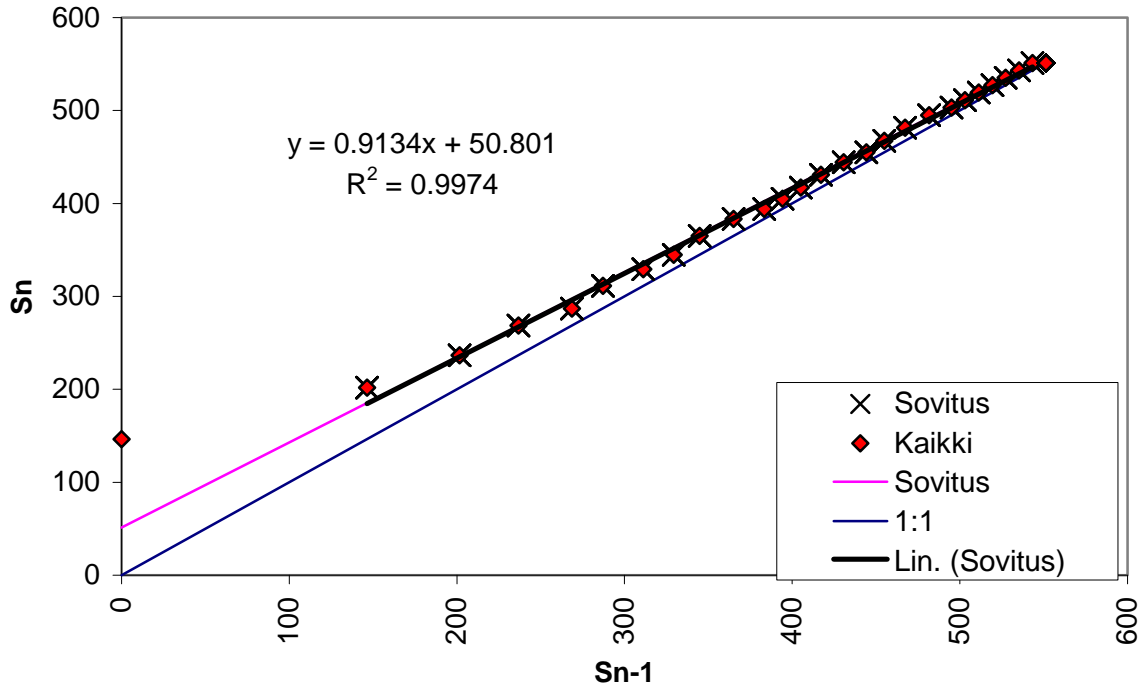


Aika-Painuma kuvaaja

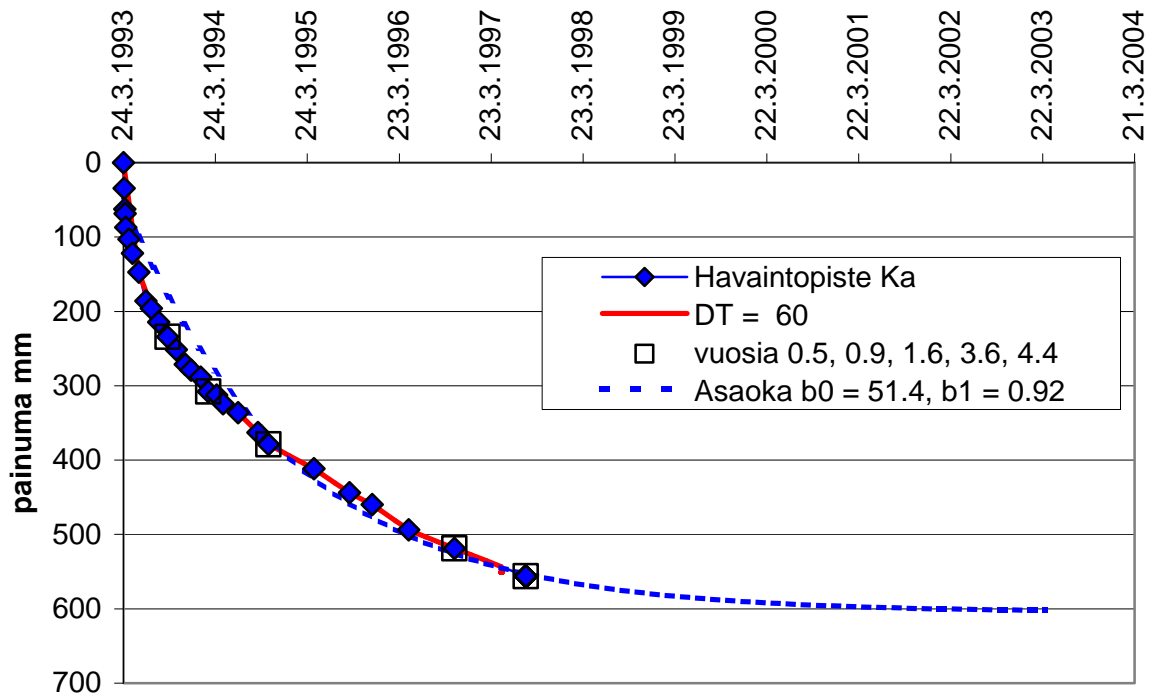


pain. t (a)	tod. t
7.4	7.4

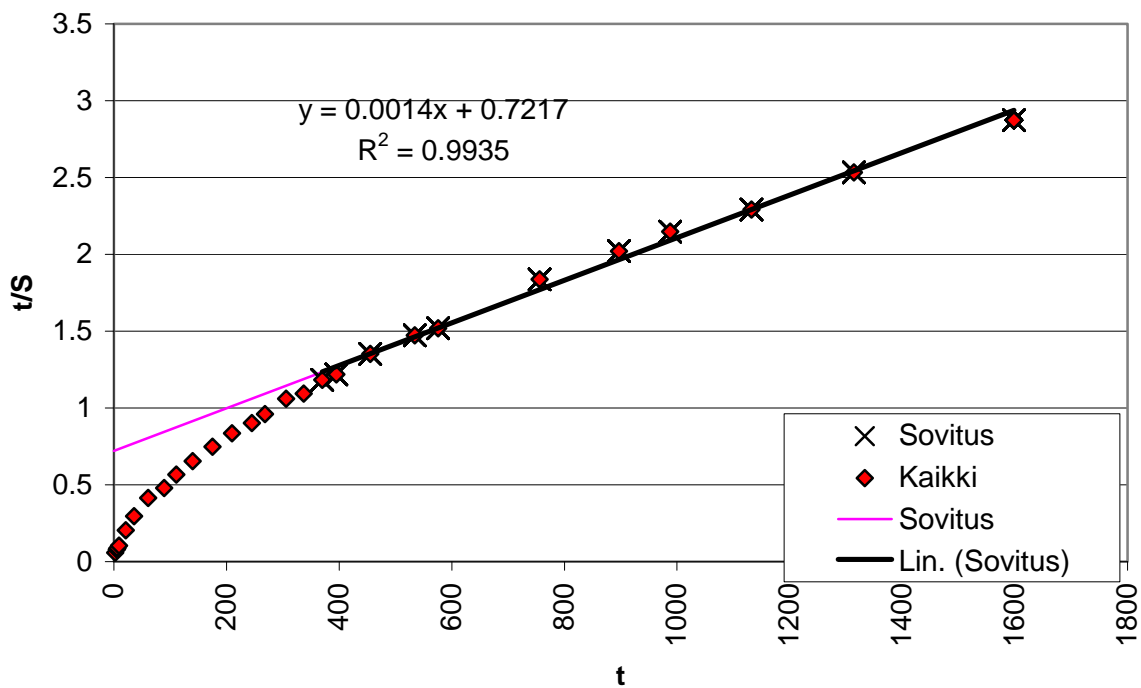
input				output			
	β_0	β_1	t	Prim. Pain.	pain7.4	virh. mm	
Asaoka	51.4	0.915	60.00	605	594	ei havaint.	
	51.4	0.915	60.00				



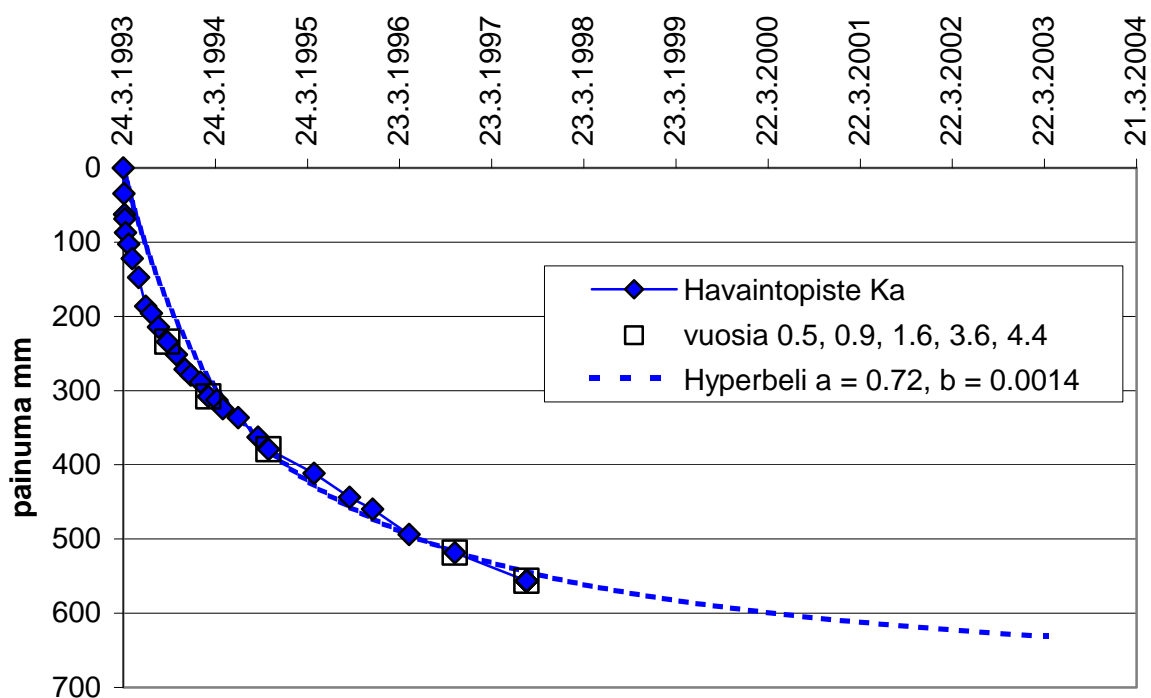
Aika-Painuma kuvaaja



Painumaennuste		Hyperbeli		LIITE II / s. 12	
Koepenger, Murro 4 v havainnot				Havaintopiste Ka	
				pain. t (a)	tod. t
				7.4	7.4
input			output		
	a	b	Painuma		virh. mm
Hyperbeli	0.72	1.39E-03	721	605	ei havaint.



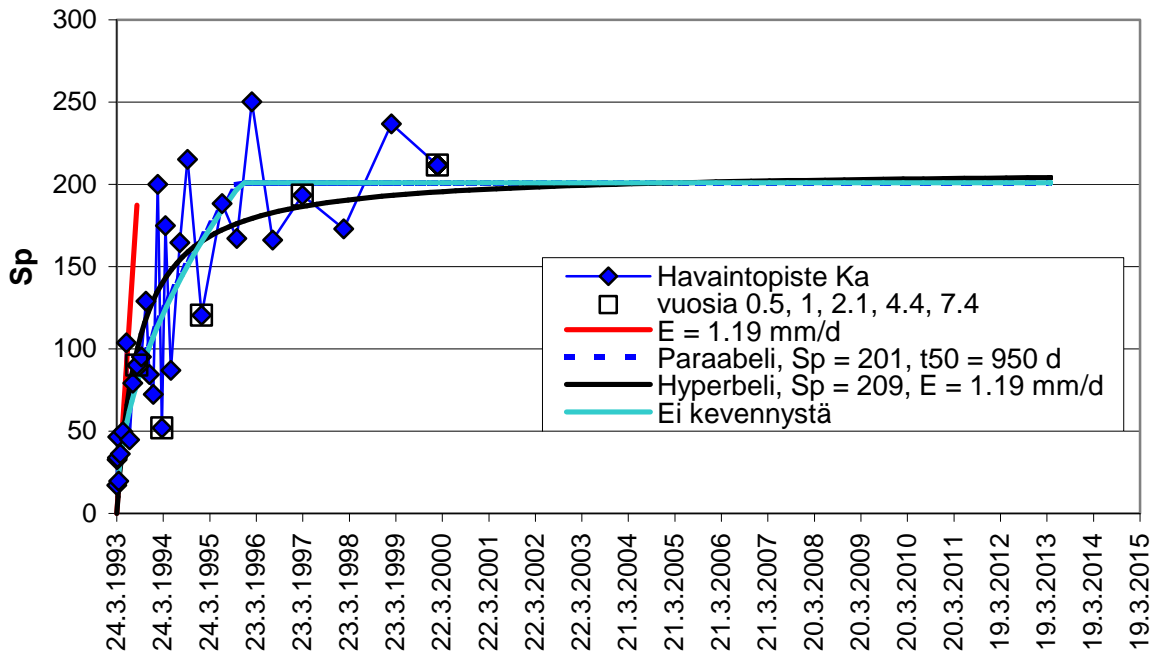
Aika-Painuma kuvaaja



Koepenger, Murro 7,4 v havainnot

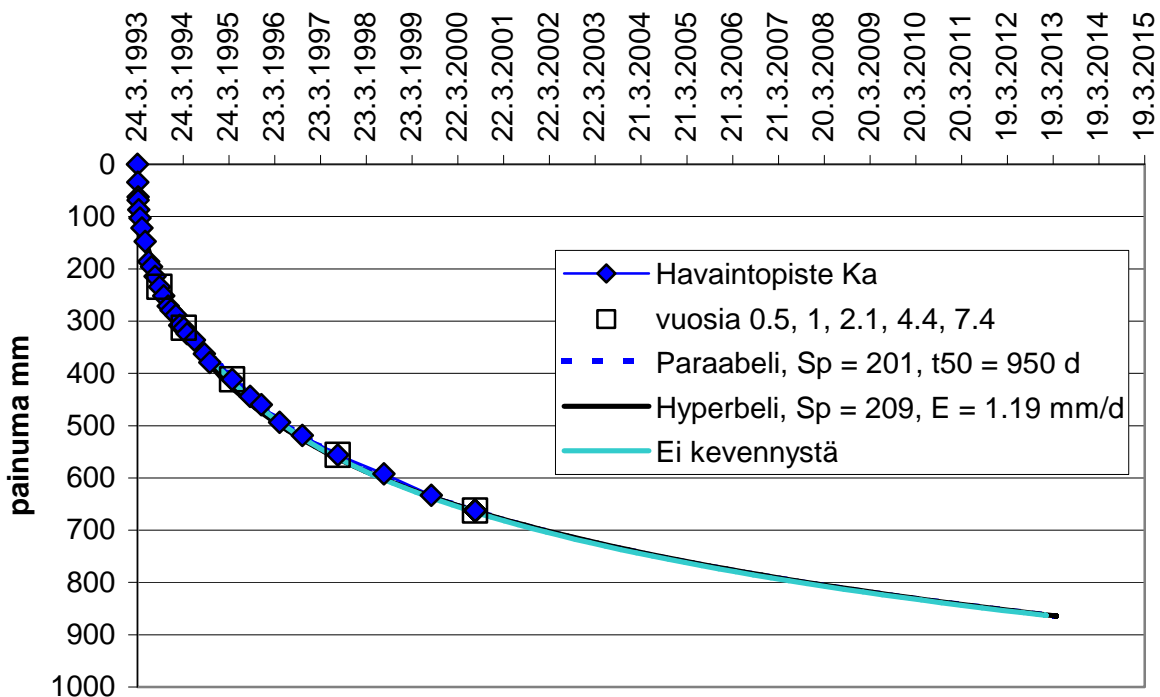
Havaintopiste Ka ▼

● 1-puol. kl	H	w	m (b = 0)	m	alkupai.	t0 (d)	pain. t (a)	tod. t
○ 2-puol. kl	21	65	8.3...14	7	90	9	20	20
input				80				
	Sp	t50/E	rs	B	c _v	pain. 20	virh. mm	
Paraabeli	201	950	104	0.067	15.4	863	ei havaint.	
Hyperbeli	209	1.19	100	0.070		864	ei havaint.	



Aika-Painumapotentiaali kuvaaja

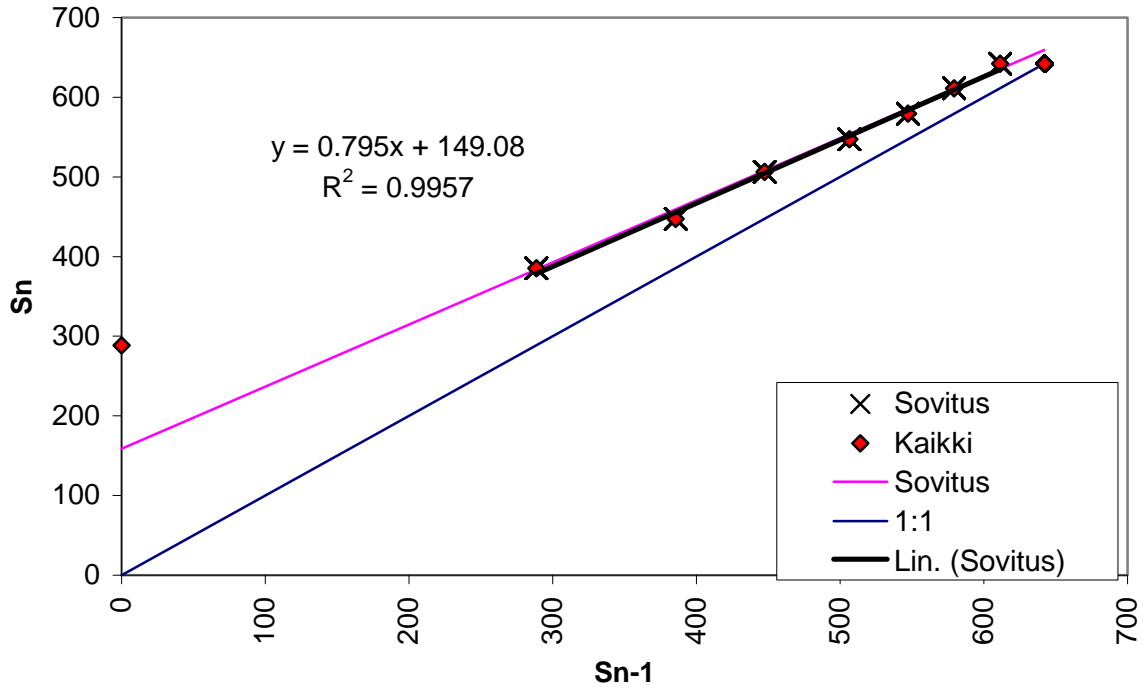
Aika-Painuma kuvaaja



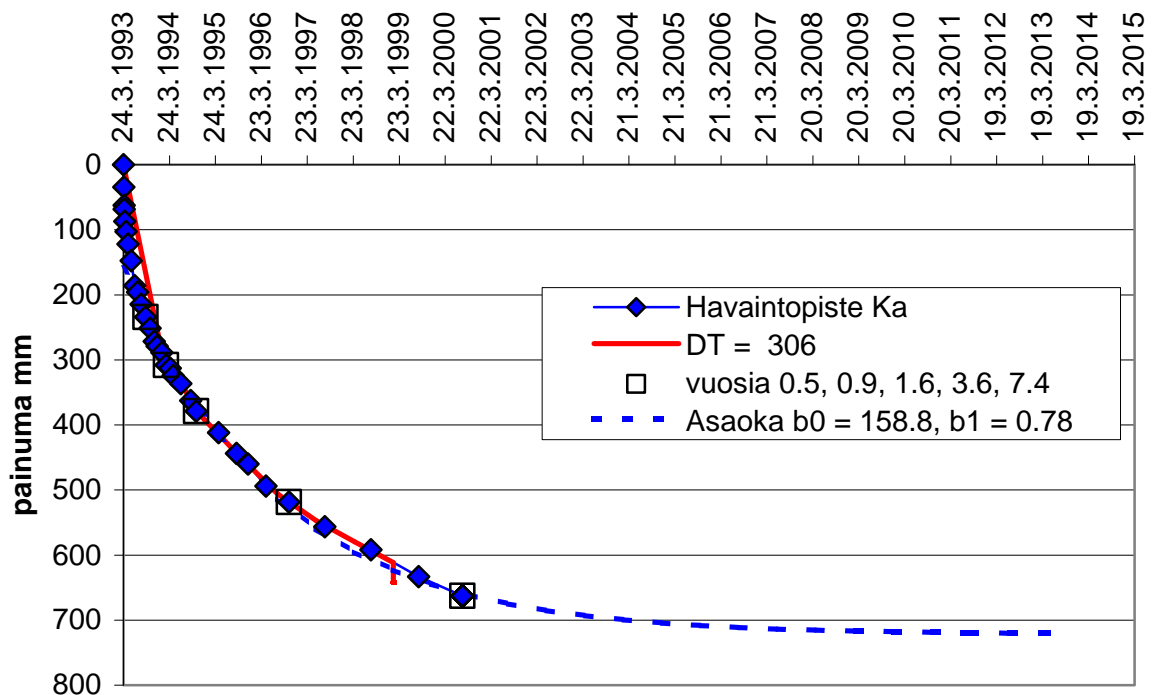


pain. t (a)	tod. t
20	20.1

input				output			
	β_0	β_1	t	Prim. Pain.		pain20.1	virh. mm
Asaoka	158.8	0.780	306.00	722		720	ei havaint.
	158.8	0.780	306.00				



Aika-Painuma kuvaaja





pain. t (a)

tod. t

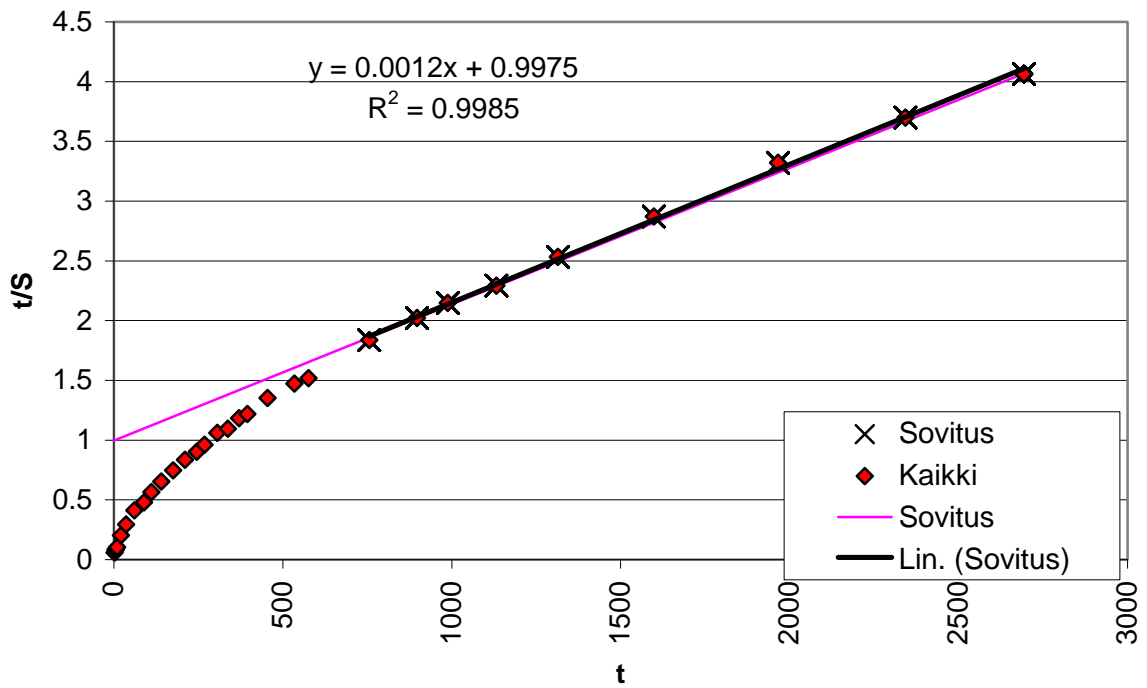
20

20

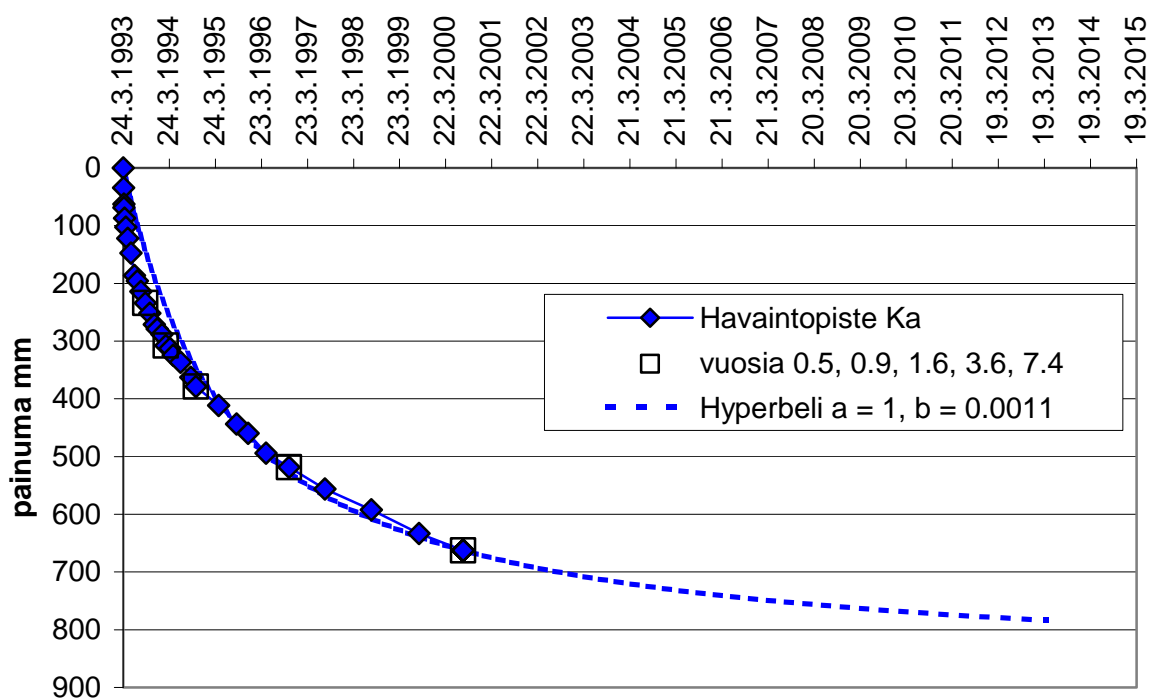
input

output

	a	b	Painuma		pain20	virh. mm
Hyperbeli	1.00	1.14E-03	877		783	ei havaint.



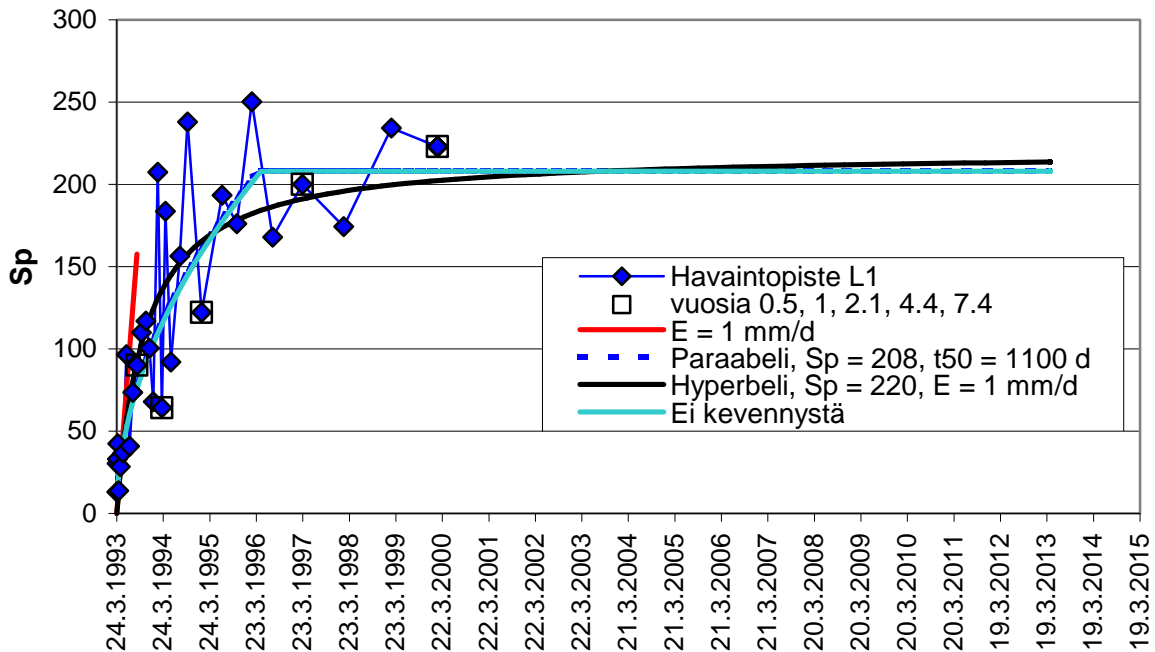
Aika-Painuma kuvaaja



Koepenger, Murro 7,4 v havainnot

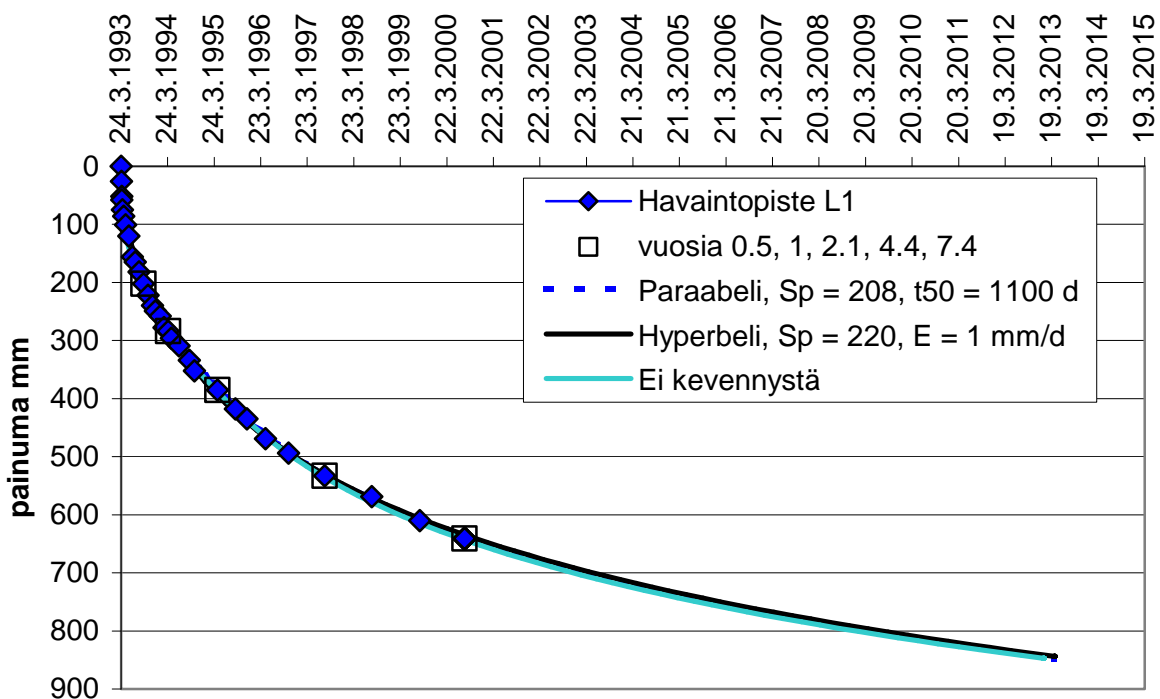
Havaintopiste L1

● 1-puol. kl	H	w	m (b = 0)	m	alkupai.	t0 (d)	pain. t (a)	tod. t
○ 2-puol. kl	21	65	8.3...14	7	75	9	20	20
input				80				
	Sp	t50/E	rs	B	c _v	pain. 20	virh. mm	
Paraabeli	208	1100	101	0.069	13.3	847	ei havaint.	
Hyperbeli	220	1.00	95	0.073		843	ei havaint.	

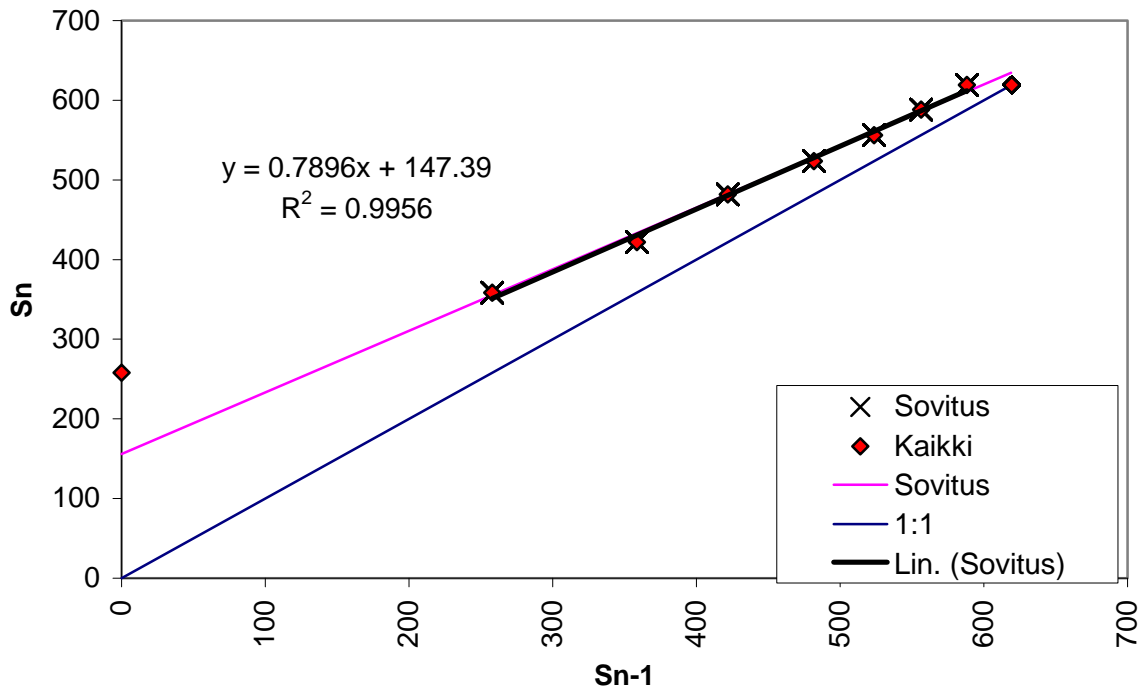


Aika-Painumapotentialiaali kuvaaja

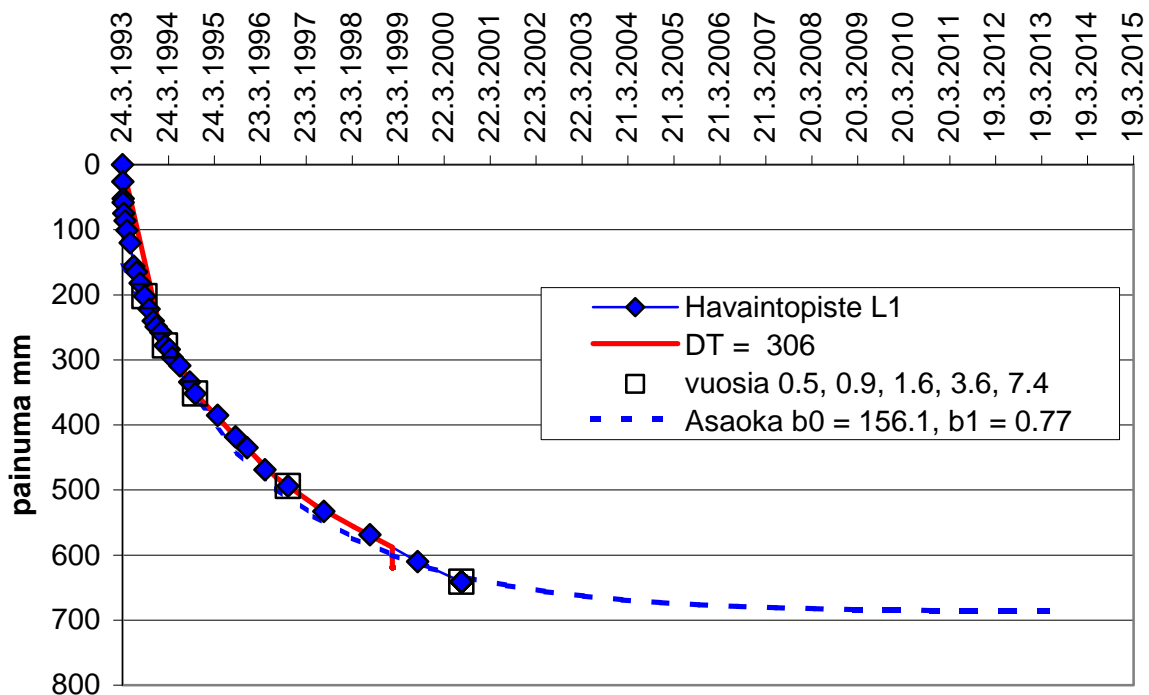
Aika-Painuma kuvaaja



Painumaennuste			Asaoka		LIITE II / s. 17		
Koepenger, Murro 7,4 v havainnot					Havaintopiste L1		▼
					pain. t (a)	tod. t	
					20	20.1	
input				output			
	β_0	β_1	t	Prim. Pain.		pain20.1	virh. mm
Asaoka	156.1	0.773	306.00	688		687	ei havaint.
	156.1	0.773	306.00				



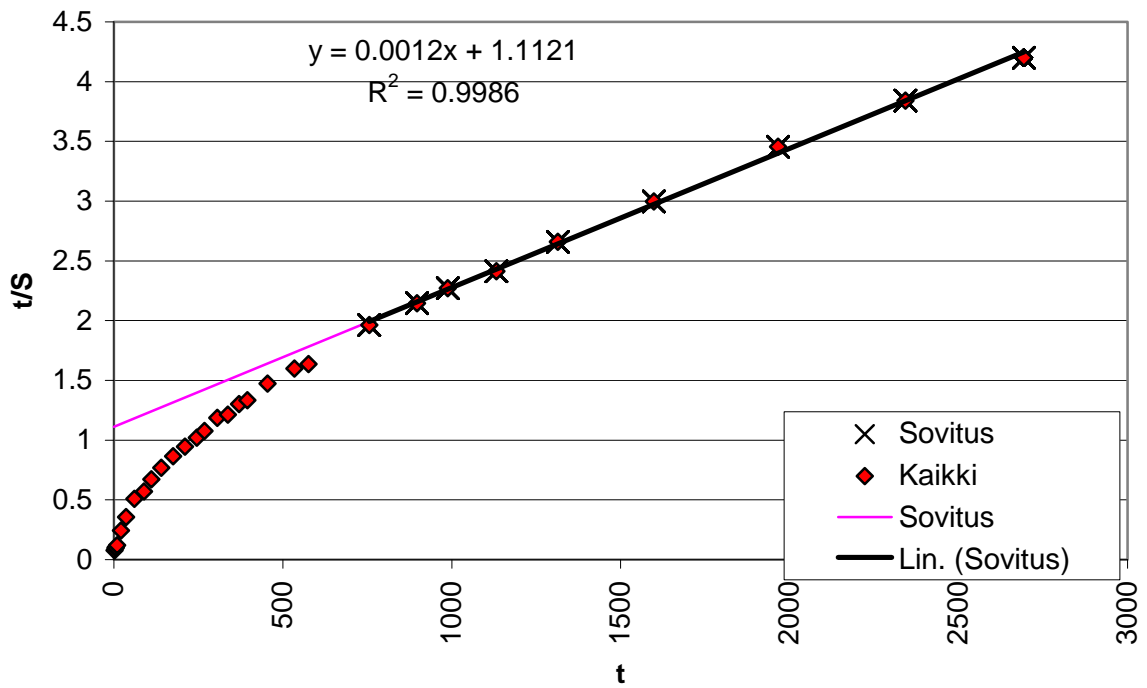
Aika-Painuma kuvaaja



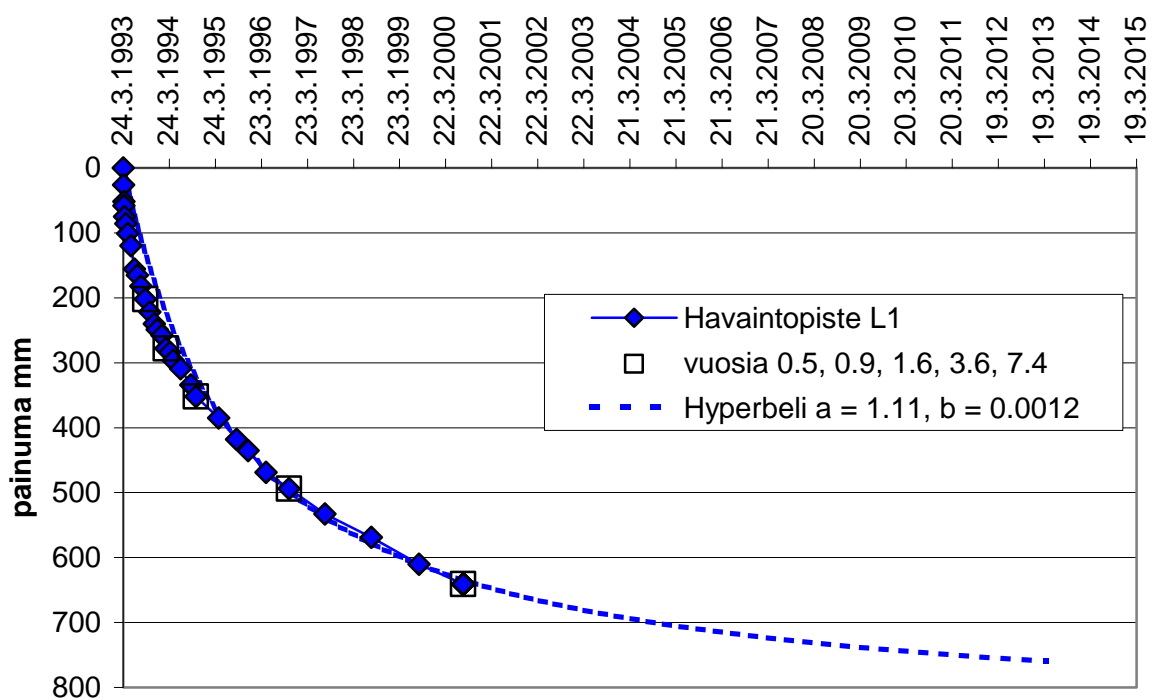


pain. t (a)	tod. t
20	20

input			output			
	a	b	Painuma		pain20	virh. mm
Hyperbeli	1.11	1.16E-03	859		759	ei havaint.



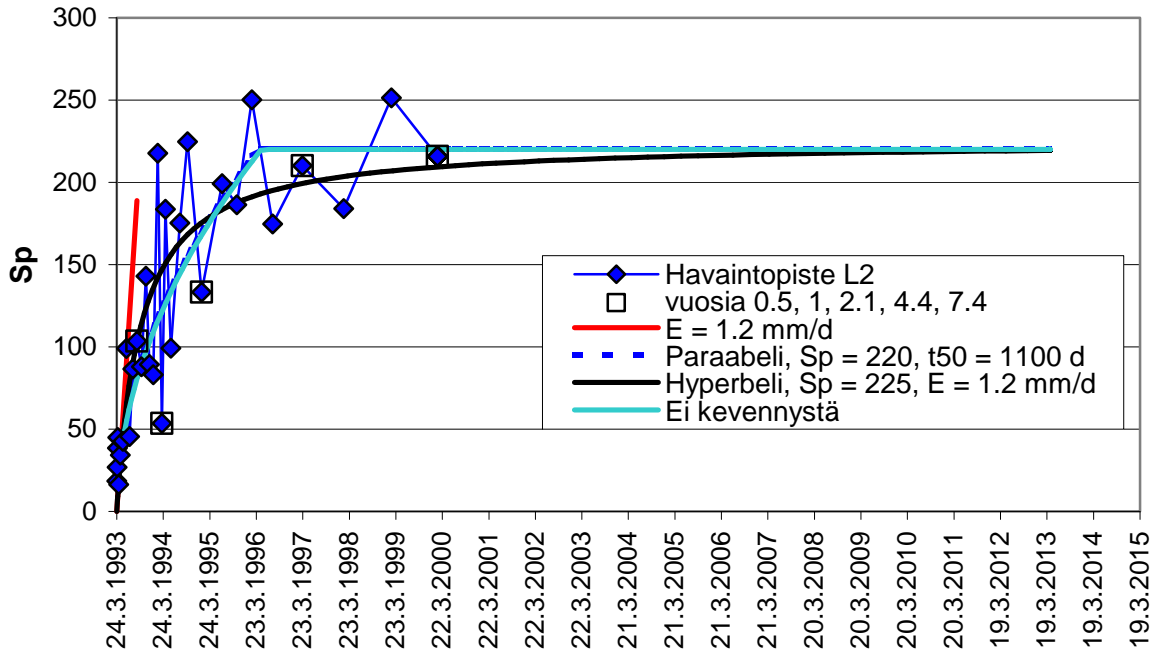
Aika-Painuma kuvaaja



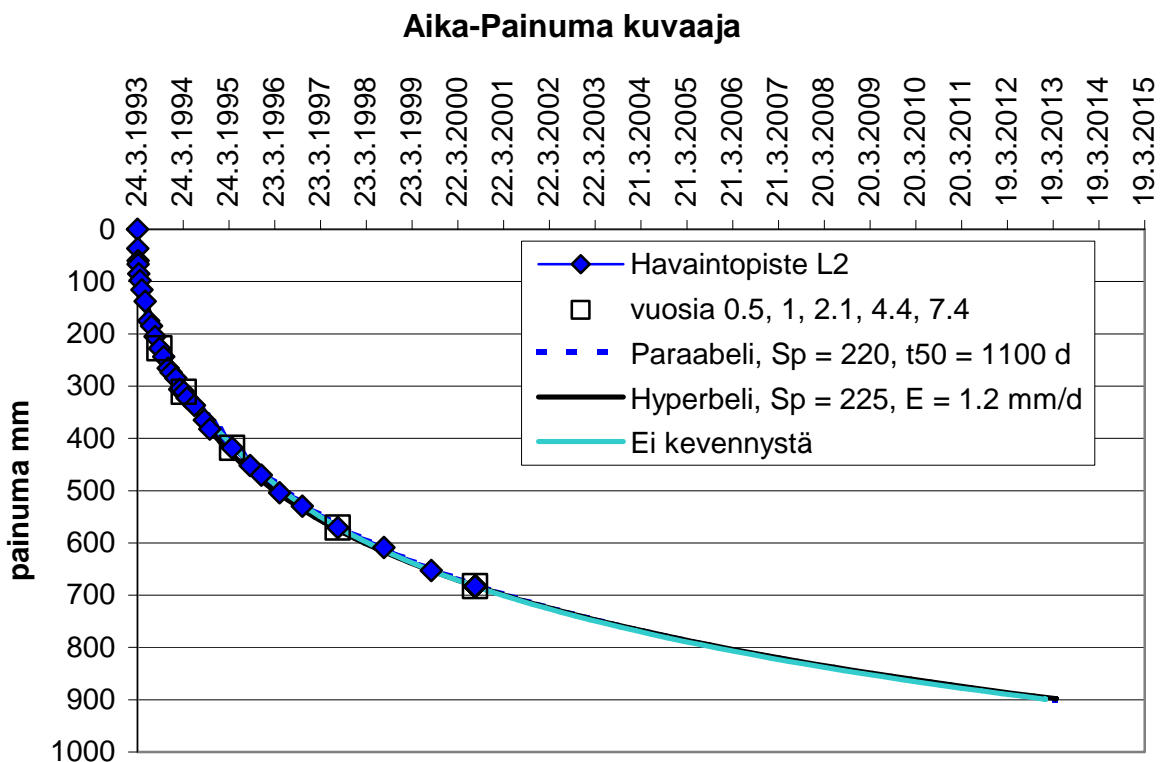
Koepenger, Murro 7,4 v havainnot

Havaintopiste L2

● 1-puol. kl	H	w	m (b = 0)	m	alkupai.	t0 (d)	pain. t (a)	tod. t
○ 2-puol. kl	21	65	8.3...14	7	75	6	20	20
input				80				
	Sp	t50/E	rs	B	c _v	pain. 20	virh. mm	
Paraabeli	220	1100	95	0.073	13.3	899	ei havaint.	
Hyperbeli	225	1.20	93	0.075		898	ei havaint.	



Aika-Painumapotentiaali kuvaaja

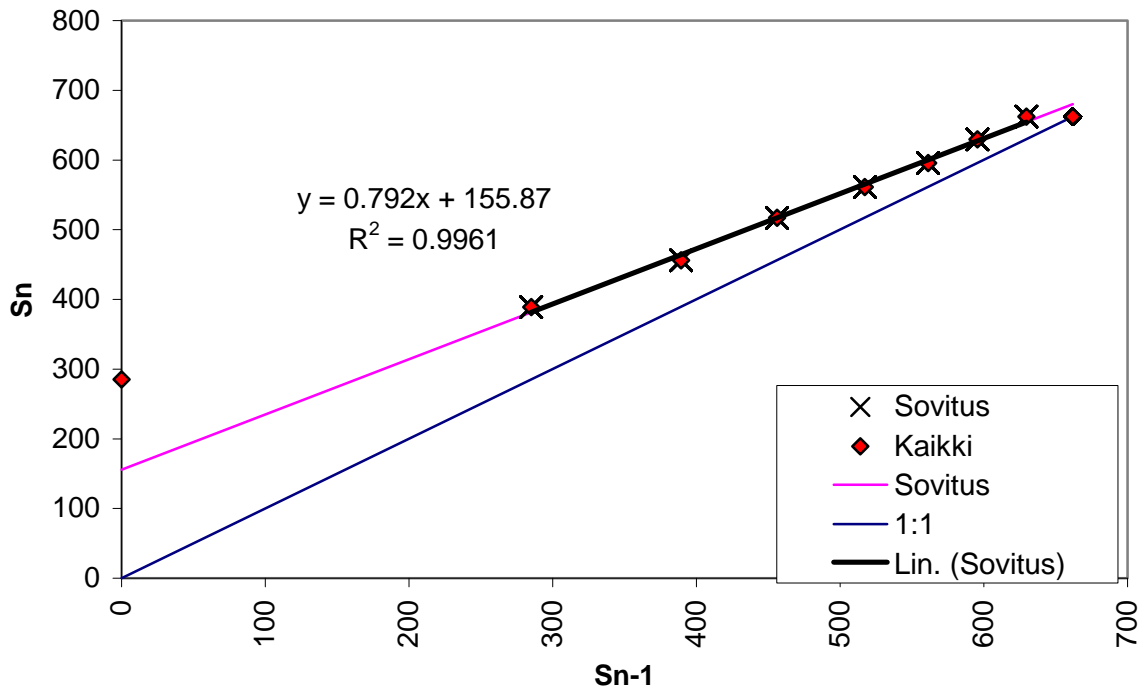


Aika-Painuma kuvaaja

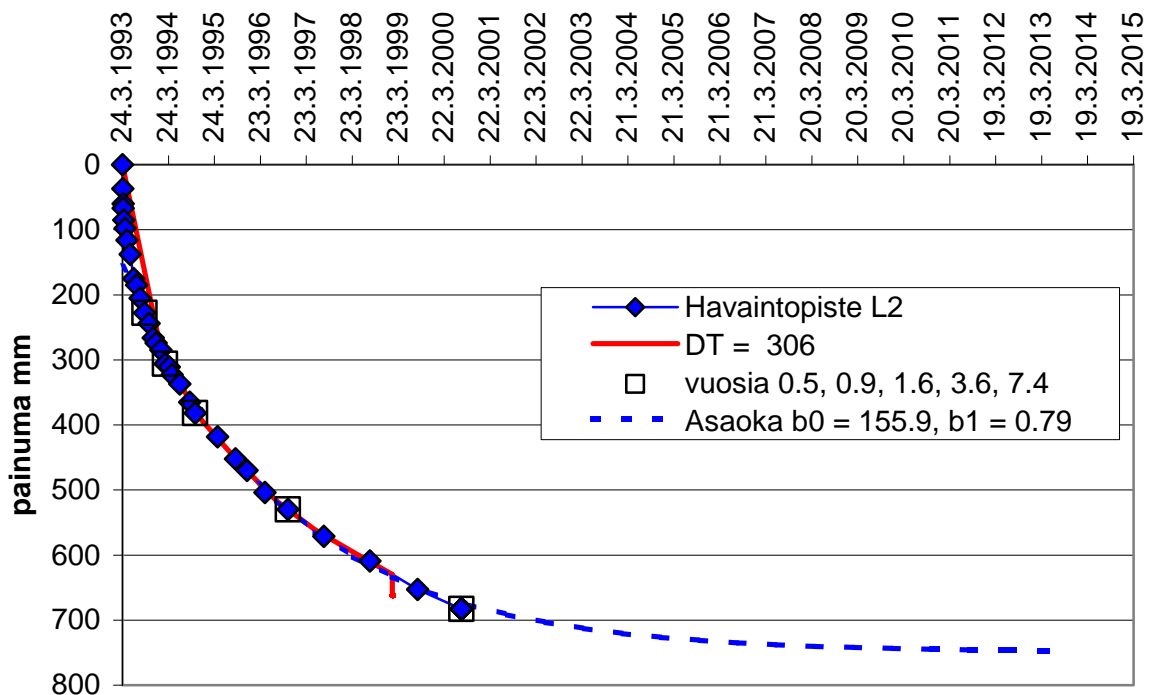


pain. t (a)	tod. t
20	20.1

input				output			
	β_0	β_1	t	Prim. Pain.		pain20.1	virh. mm
Asaoka	155.9	0.792	306.00	749		747	ei havaint.
	155.9	0.792	306.00				



Aika-Painuma kuvaaja





pain. t (a)

tod. t

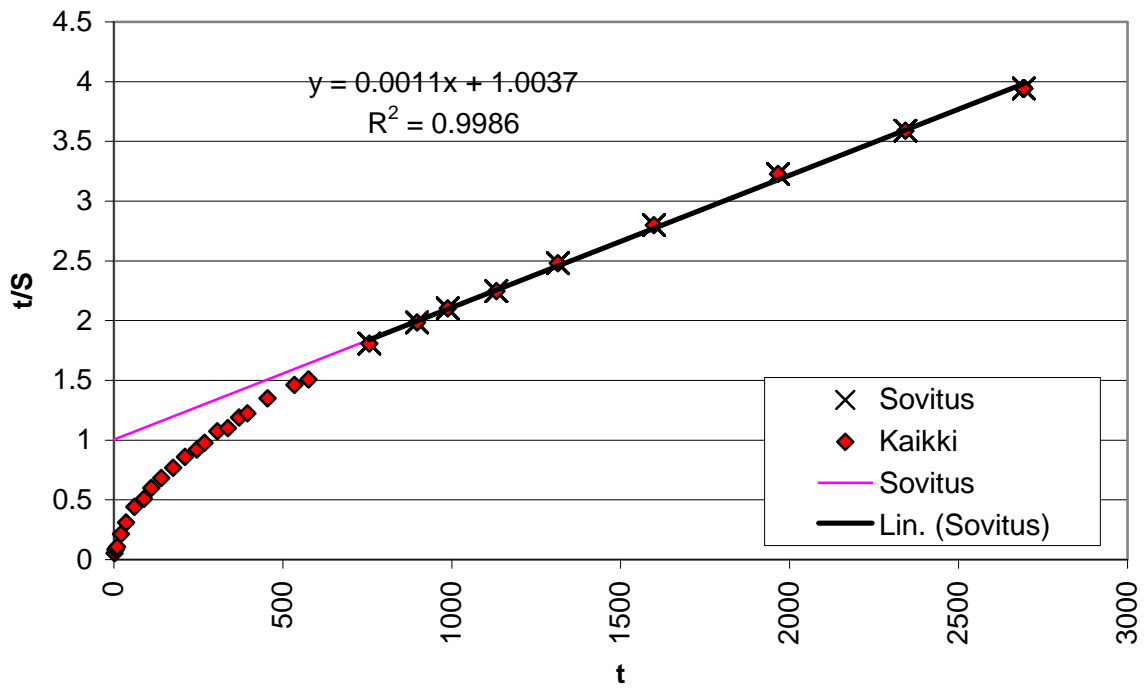
20

20

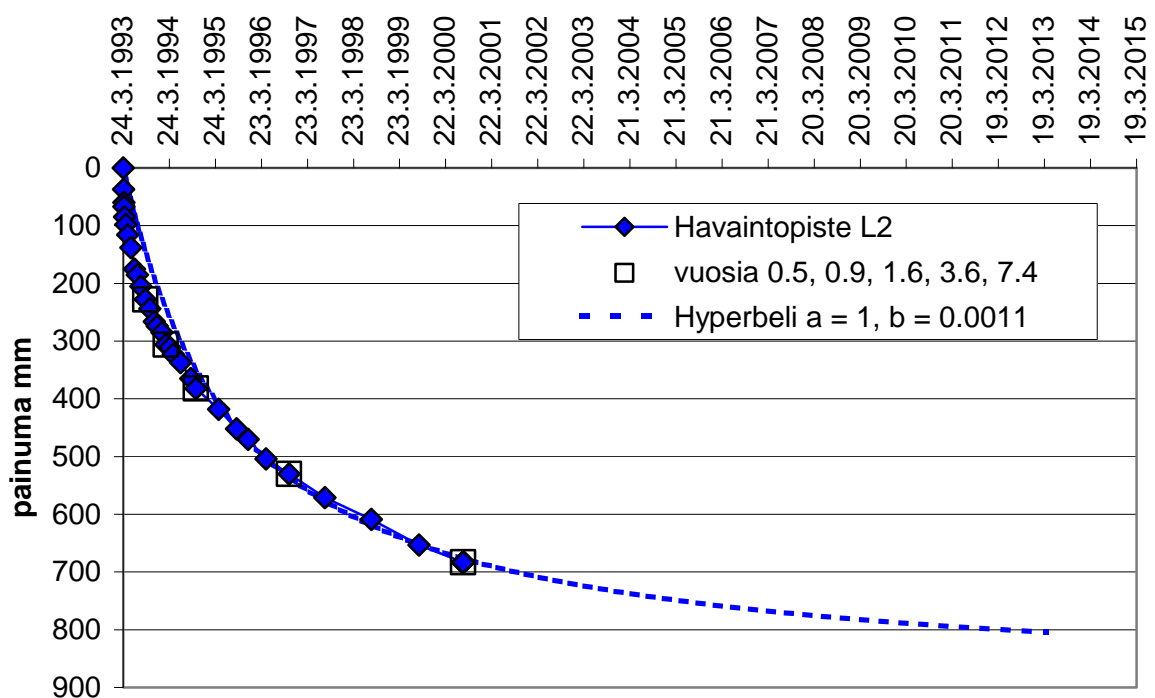
input

output

	a	b	Painuma		pain20	virh. mm
Hyperbeli	1.00	1.11E-03	904		804	ei havaint.



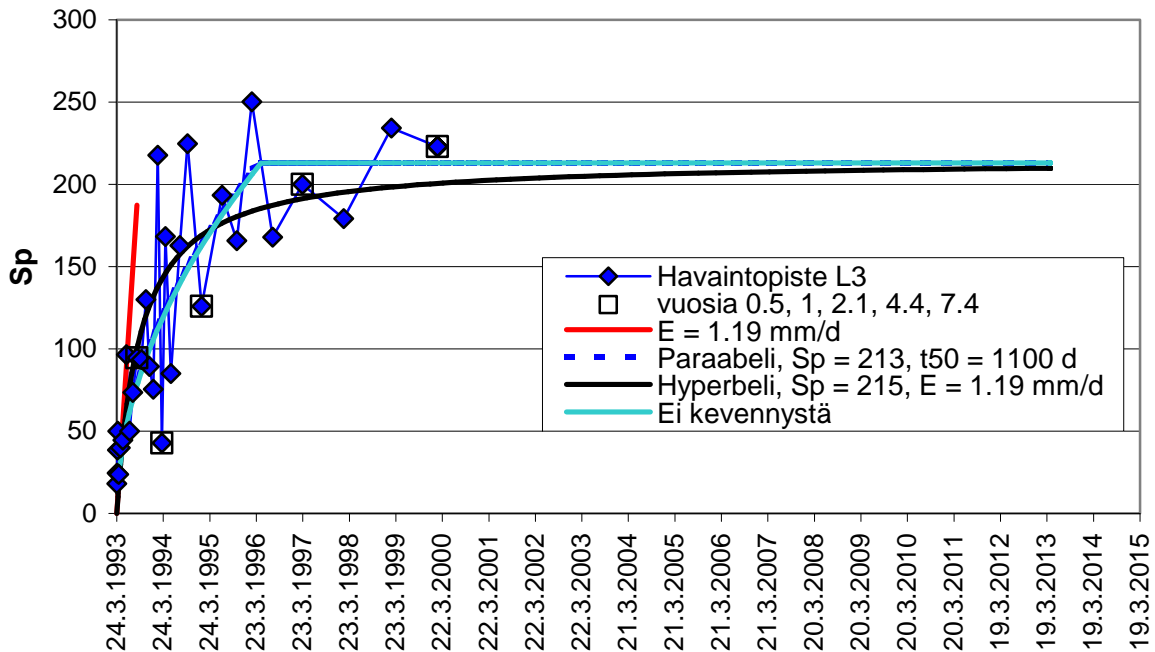
Aika-Painuma kuvaaja



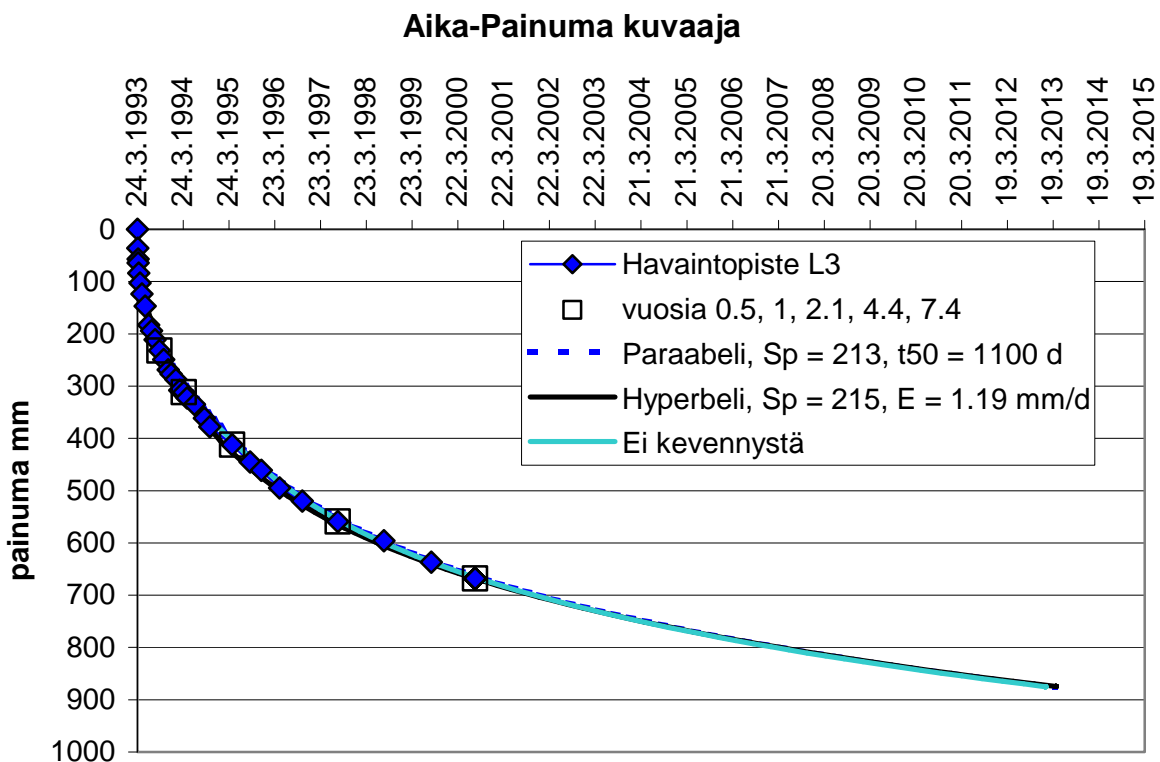
Koepenger, Murro 7,4 v havainnot

Havaintopiste L3

● 1-puol. kl	H	w	m (b = 0)	m	alkupai.	t0 (d)	pain. t (a)	tod. t
○ 2-puol. kl	21	65	8.3...14	7	84	9	20	20
input				80				
	Sp	t50/E	rs	B	c _v	pain. 20	virh. mm	
Paraabeli	213	1100	99	0.071	13.3	875	ei havaint.	
Hyperbeli	215	1.19	98	0.072		874	ei havaint.	



Aika-Painumapotentialiaali kuvaaja

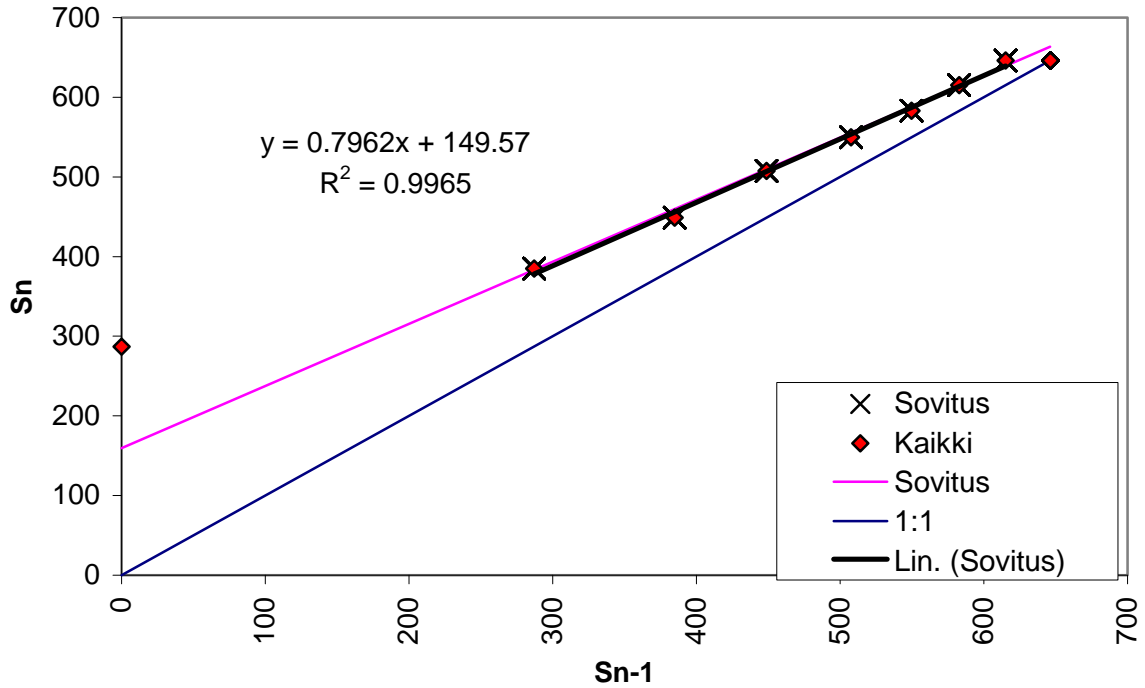


Aika-Painuma kuvaaja

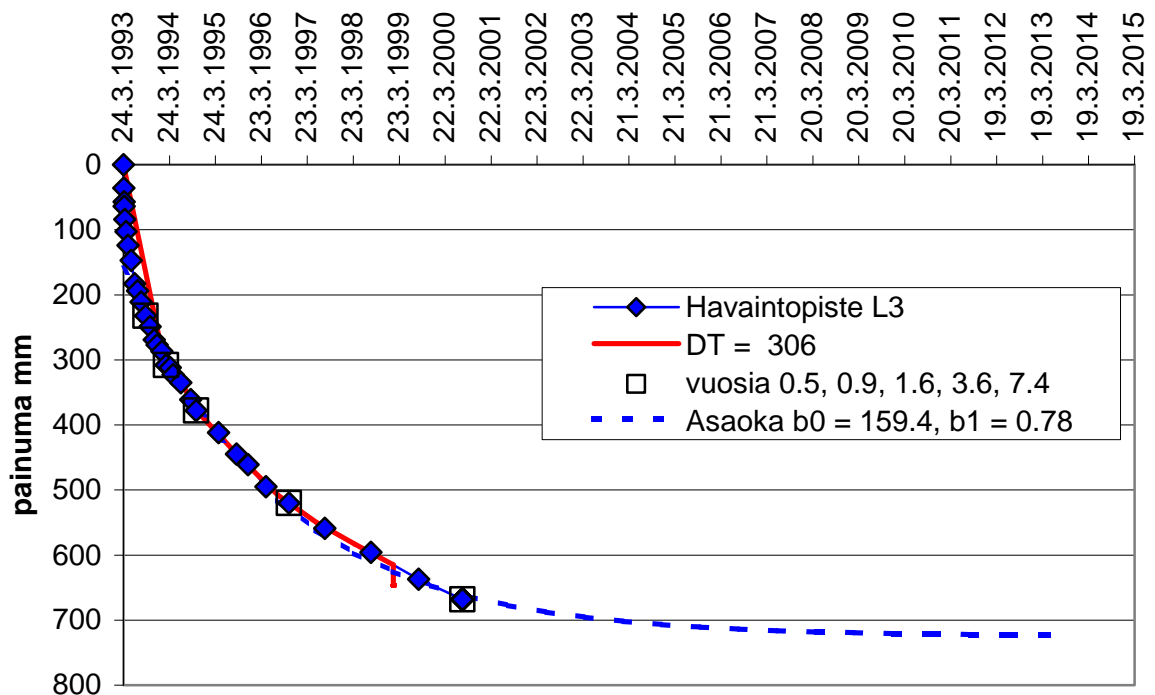


pain. t (a)	tod. t
20	20.1

input				output			
	β_0	β_1	t	Prim. Pain.		pain20.1	virh. mm
Asaoka	159.4	0.780	306.00	725		723	ei havaint.
	159.4	0.780	306.00				



Aika-Painuma kuvaaja





pain. t (a)

tod. t

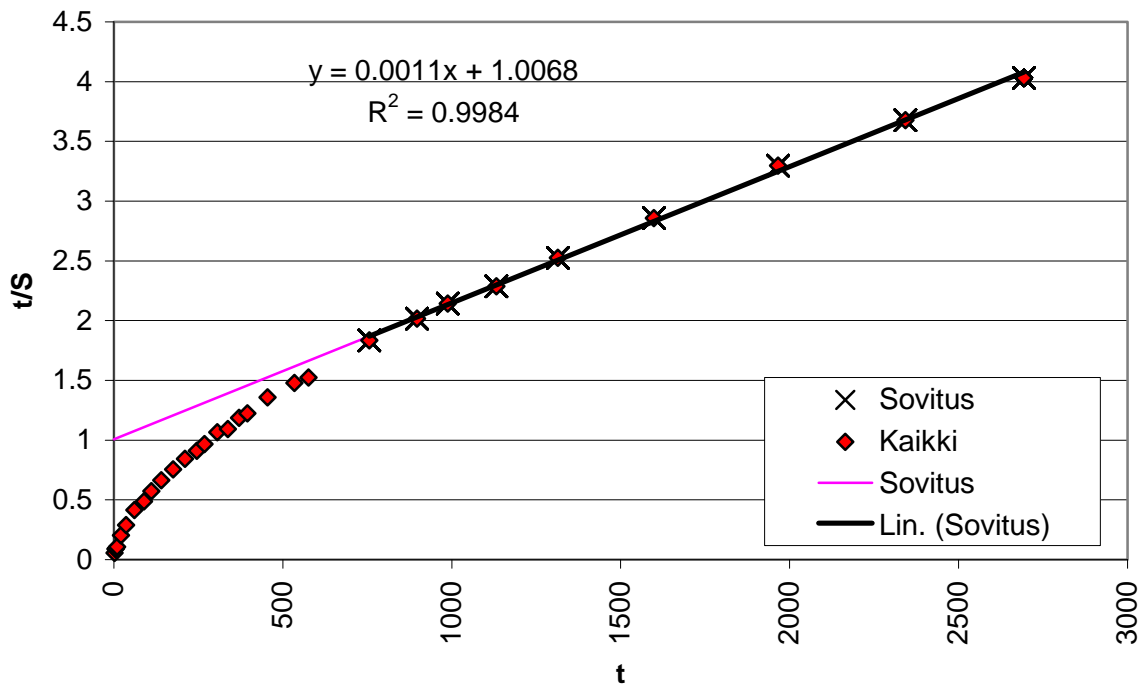
20

20

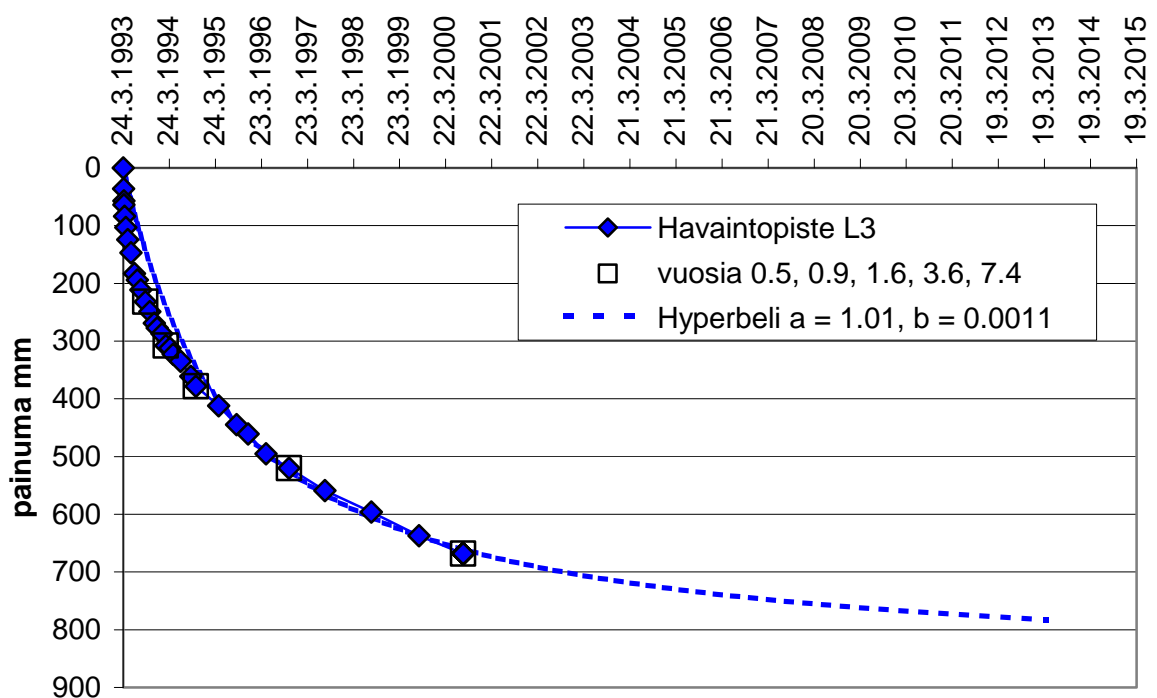
input

output

	a	b	Painuma		pain20	virh. mm
Hyperbeli	1.01	1.14E-03	877		782	ei havaint.



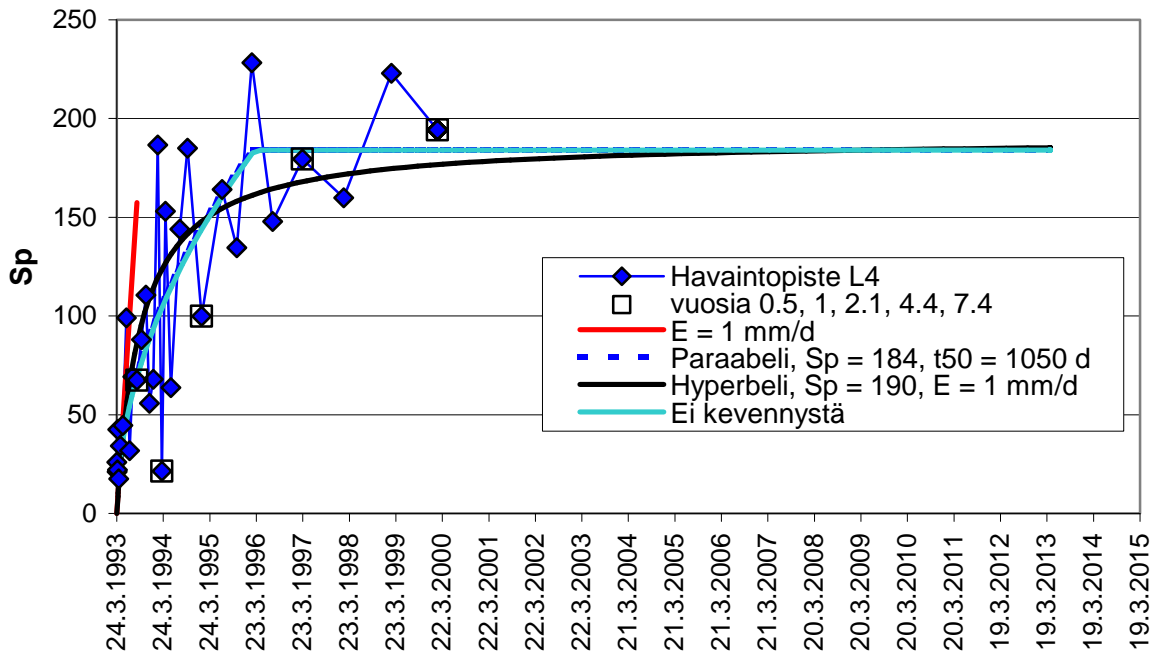
Aika-Painuma kuvaaja



Koepenger, Murro 7,4 v havainnot

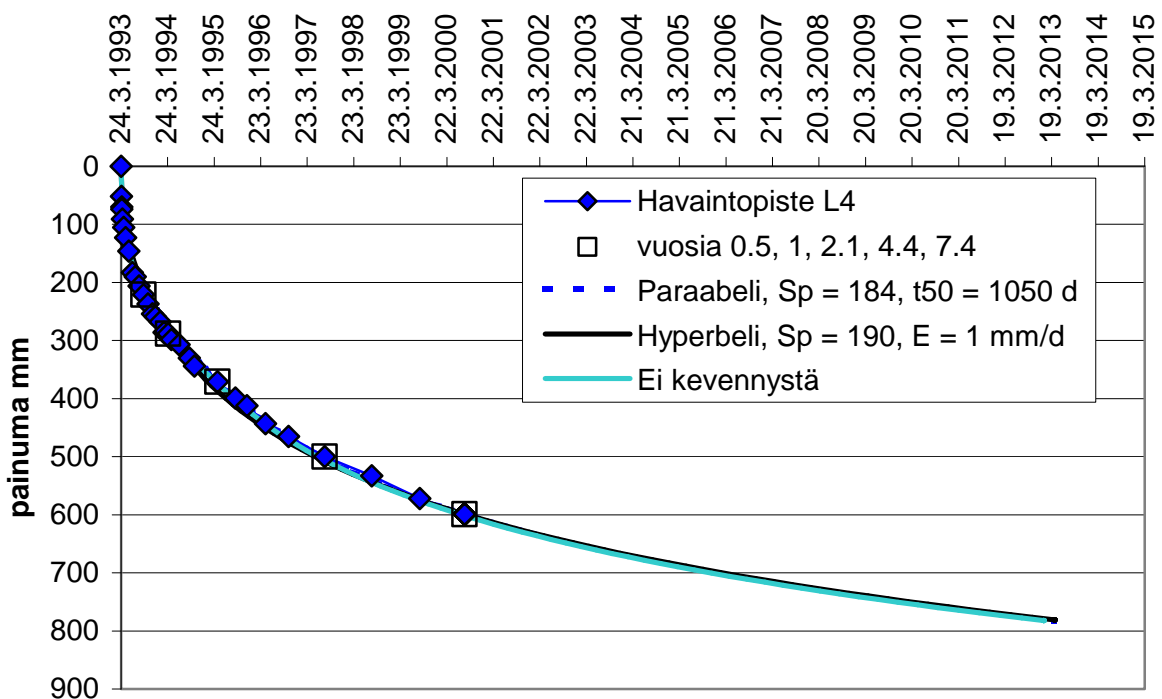
Havaintopiste L4

● 1-puol. kl	H	w	m (b = 0)	m	alkupai.	t0 (d)	pain. t (a)	tod. t
○ 2-puol. kl	21	65	8.3...14	7	91	9	20	20
input				80				
	Sp	t50/E	rs	B	c _v	pain. 20	virh. mm	
Paraabeli	184	1050	114	0.061	14.0	782	ei havaint.	
Hyperbeli	190	1.00	111	0.063		780	ei havaint.	



Aika-Painumapotentialiaali kuvaaja

Aika-Painuma kuvaaja





pain. t (a)

20

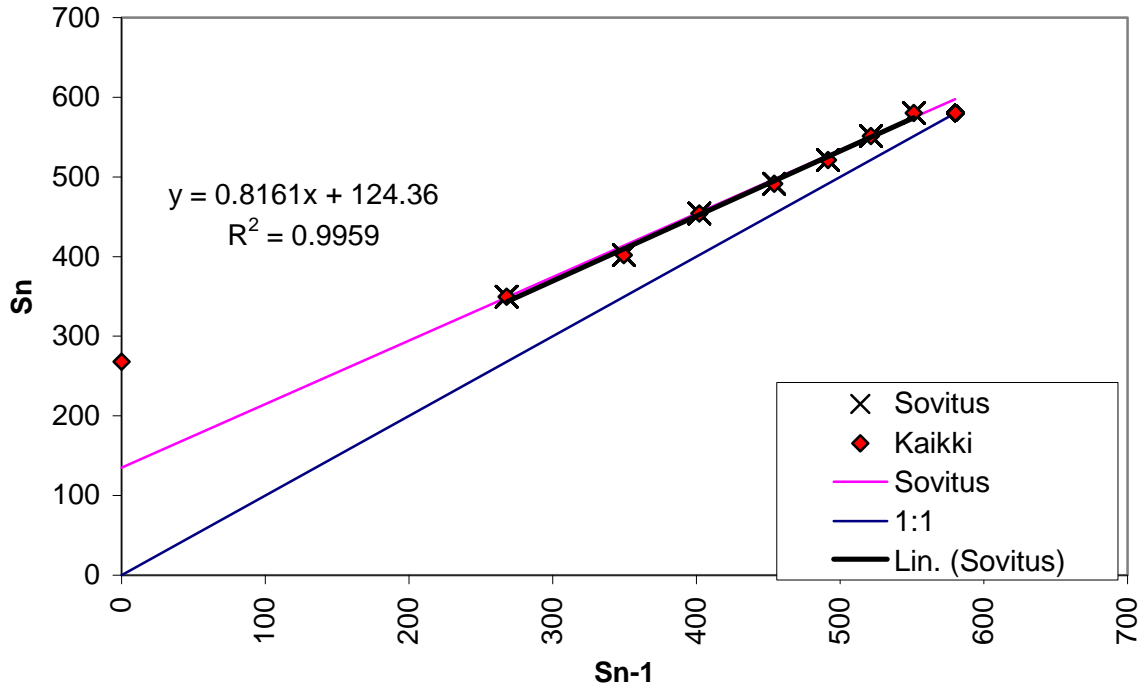
tod. t

20.1

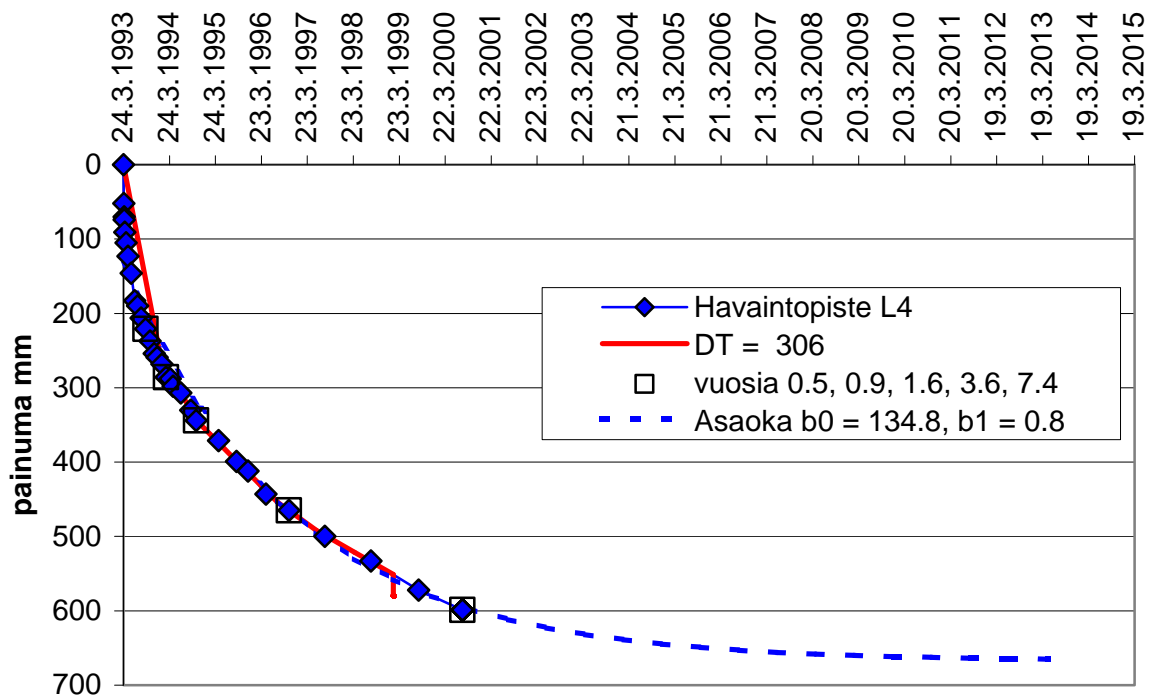
input

output

	β_0	β_1	t	Prim. Pain.	pain20.1	virh. mm
Asaoka	134.8	0.798	306.00	667	665	ei havaint.
	134.8	0.798	306.00			



Aika-Painuma kuvaaja





pain. t (a)

tod. t

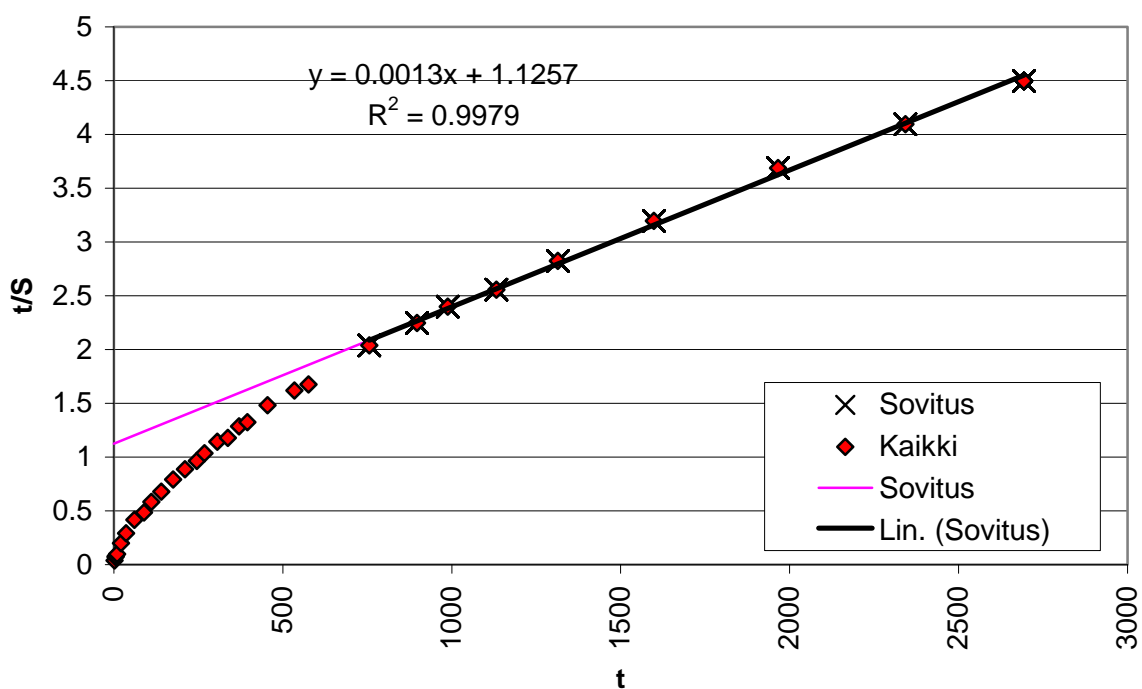
20

20

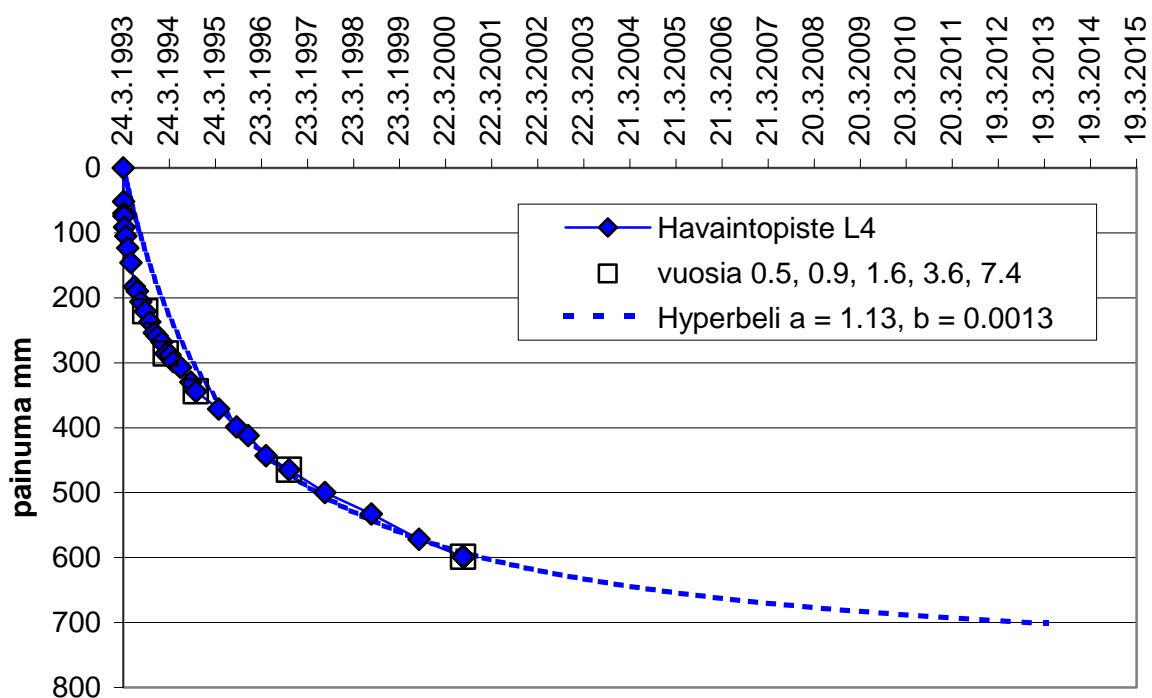
input

output

	a	b	Painuma		pain20	virh. mm
Hyperbeli	1.13	1.27E-03	786		701	ei havaint.



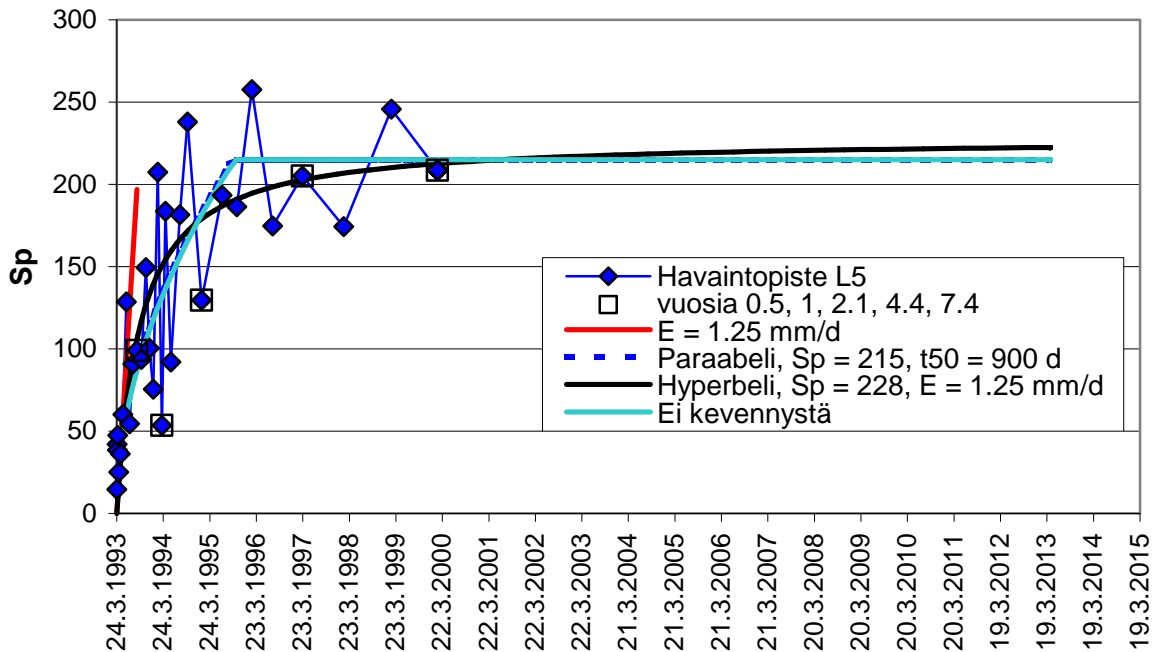
Aika-Painuma kuvaaja



Koepenger, Murro 7,4 v havainnot

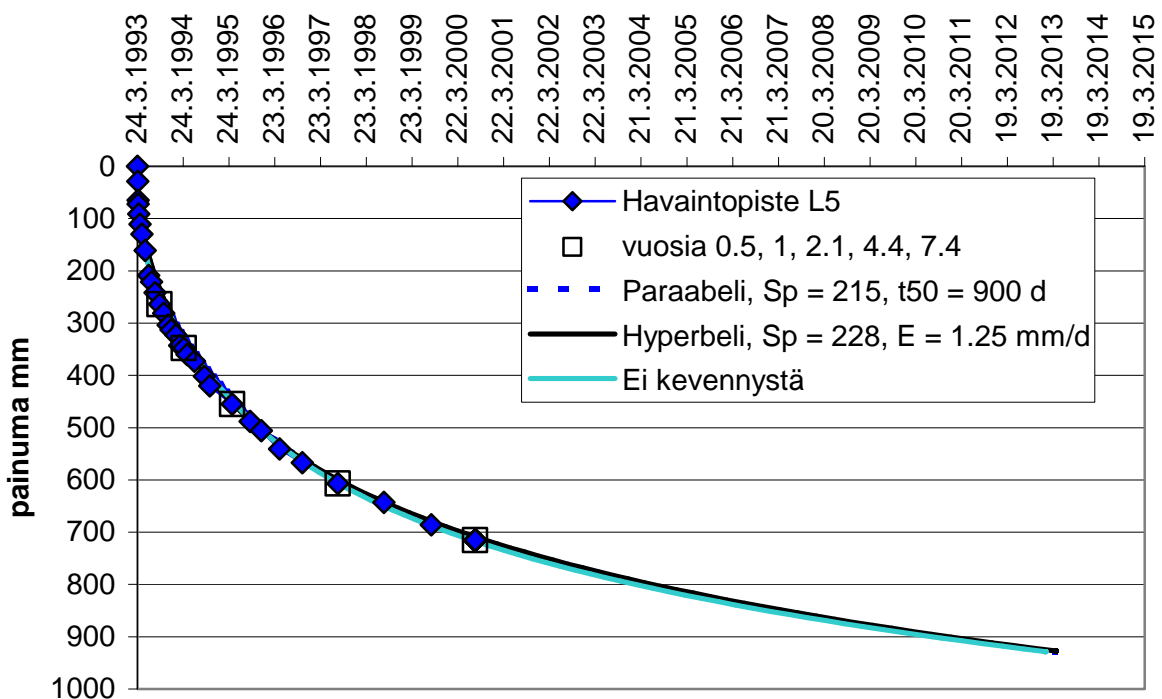
Havaintopiste L5

● 1-puol. kl	H	w	m (b = 0)	m	alkupai.	t0 (d)	pain. t (a)	tod. t
○ 2-puol. kl	21	65	8.3...14	7	91	9	20	20
input				80				
	Sp	t50/E	rs	B	c _v	pain. 20	virh. mm	
Paraabeli	215	900	98	0.072	16.3	928	ei havaint.	
Hyperbeli	228	1.25	92	0.076		927	ei havaint.	



Aika-Painumapotentialiaali kuvaaja

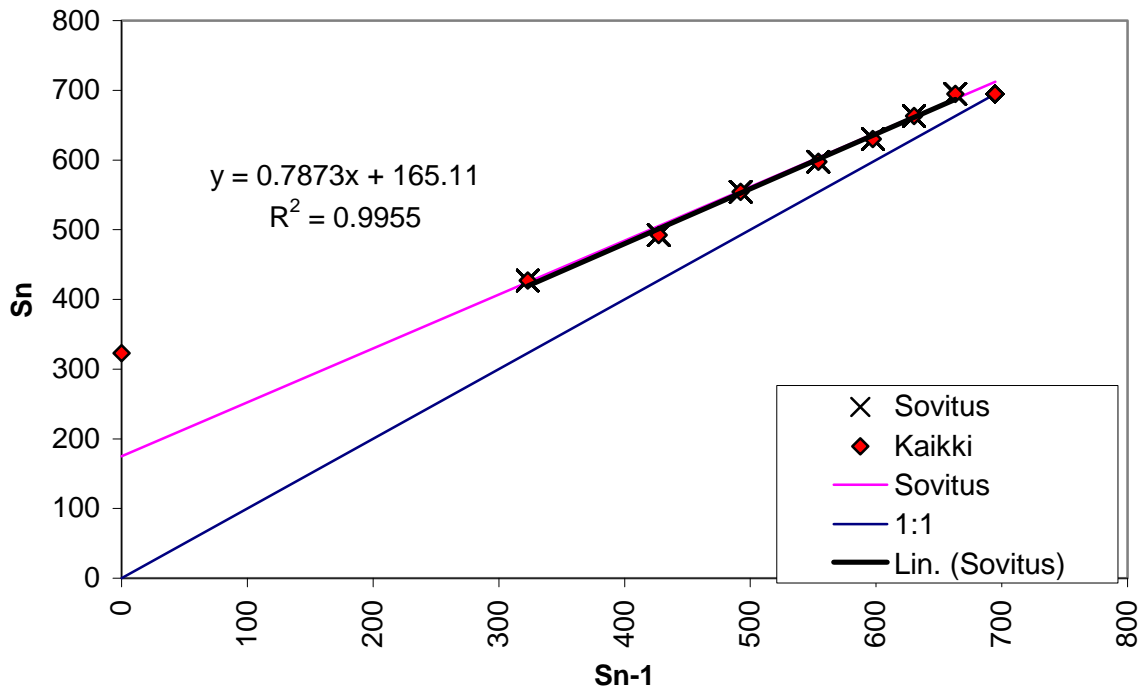
Aika-Painuma kuvaaja



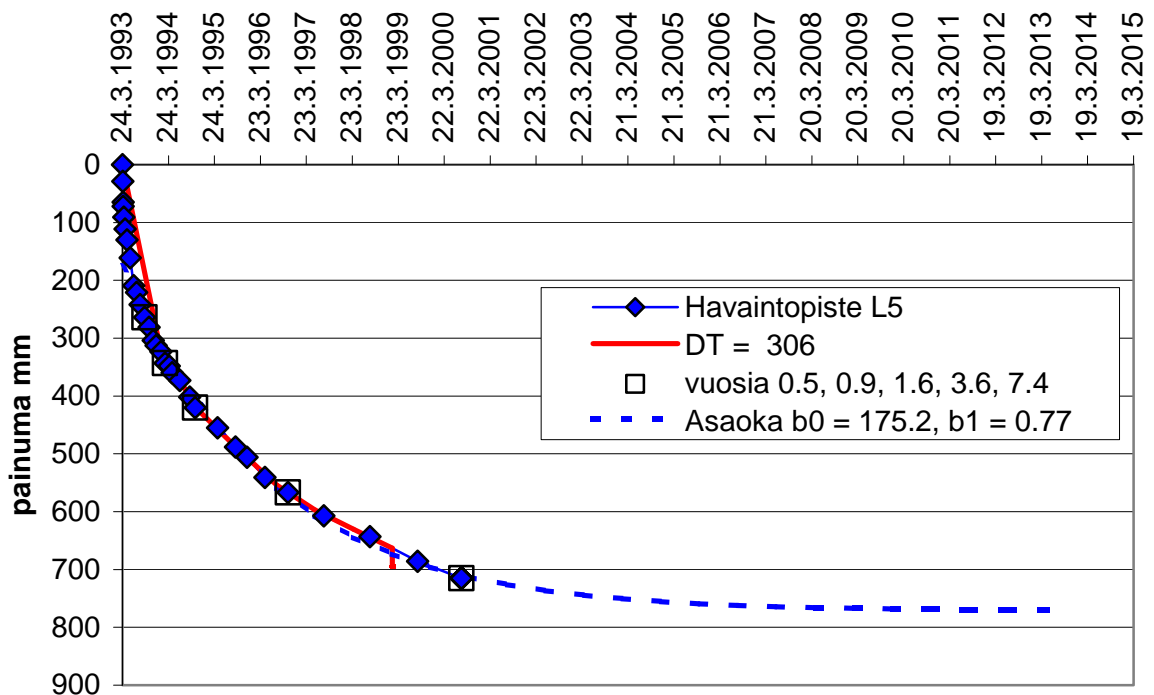


pain. t (a)	tod. t
20	20.1

input			output			
	β_0	β_1	t	Prim. Pain.	pain20.1	virh. mm
Asaoka	175.2	0.773	306.00	772	770	ei havaint.
	175.2	0.773	306.00			



Aika-Painuma kuvaaja





pain. t (a)

tod. t

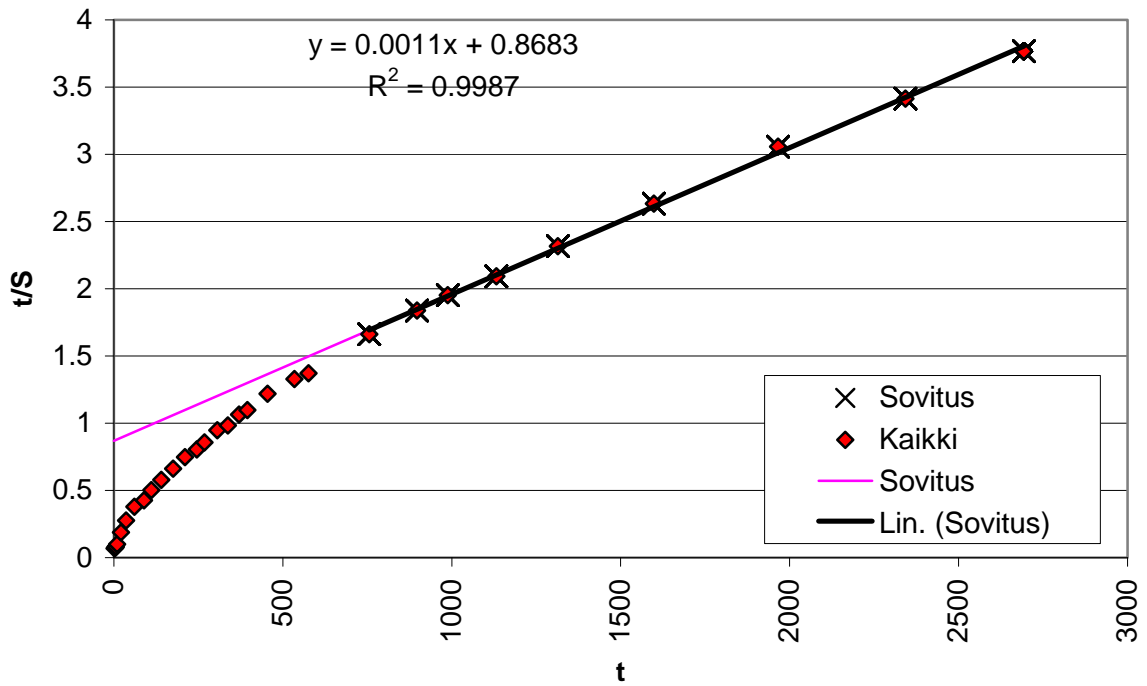
20

20

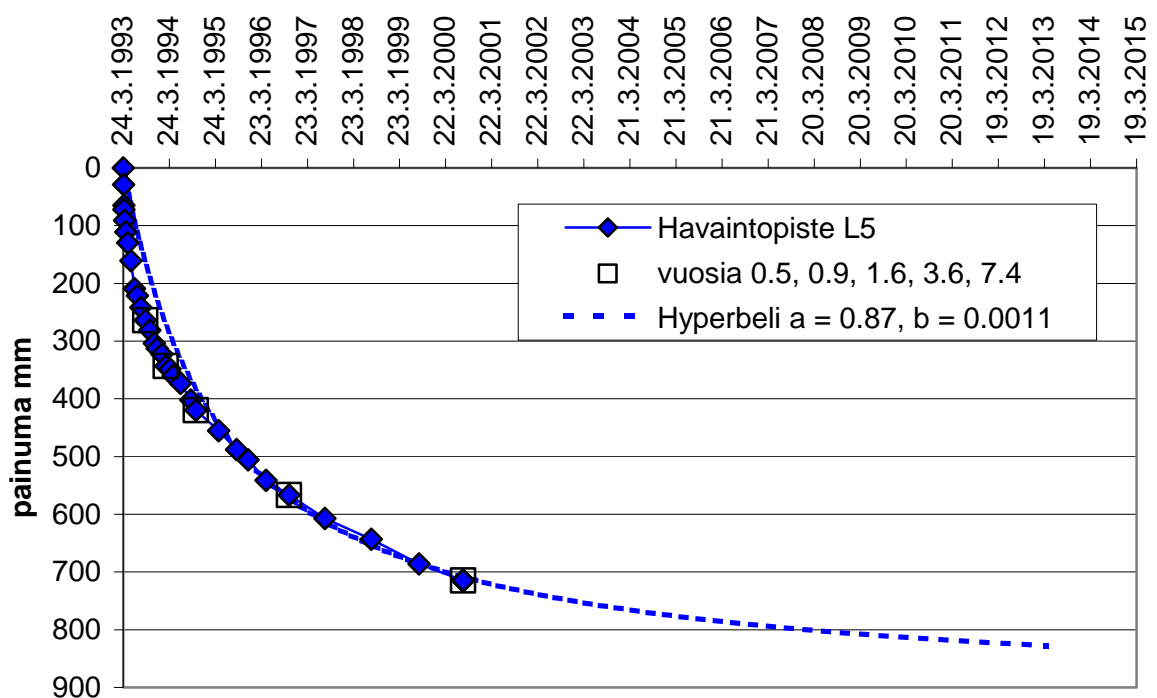
input

output

	a	b	Painuma		pain20	virh. mm
Hyperbeli	0.87	1.09E-03	917		827	ei havaint.



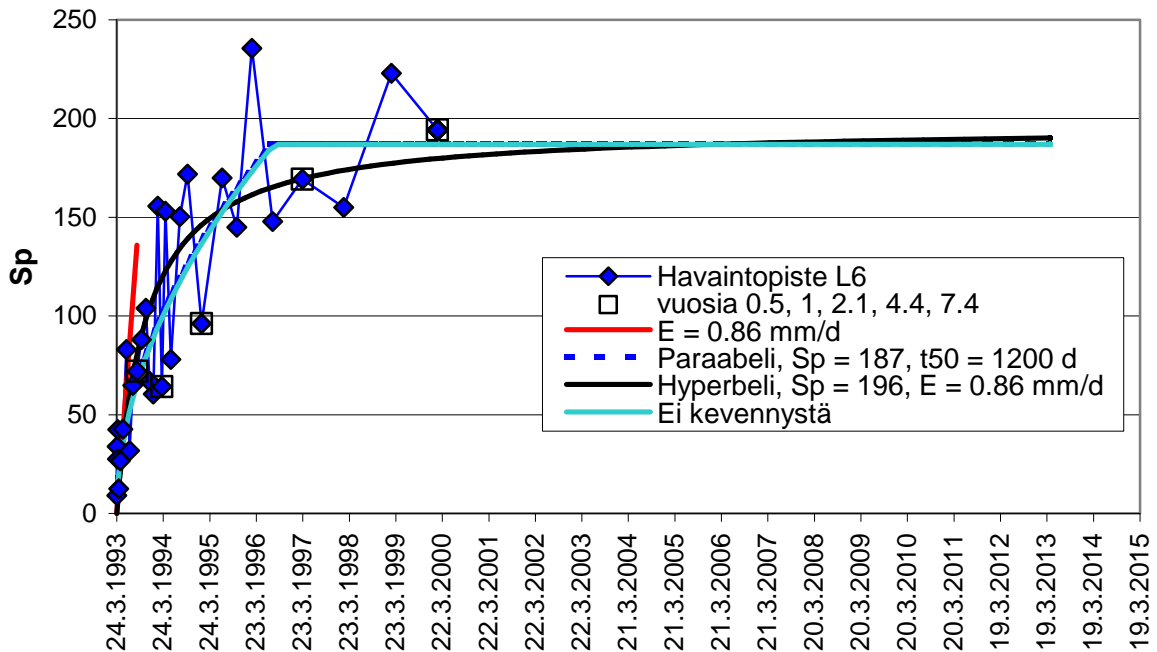
Aika-Painuma kuvaaja



Koepenger, Murro 7,4 v havainnot

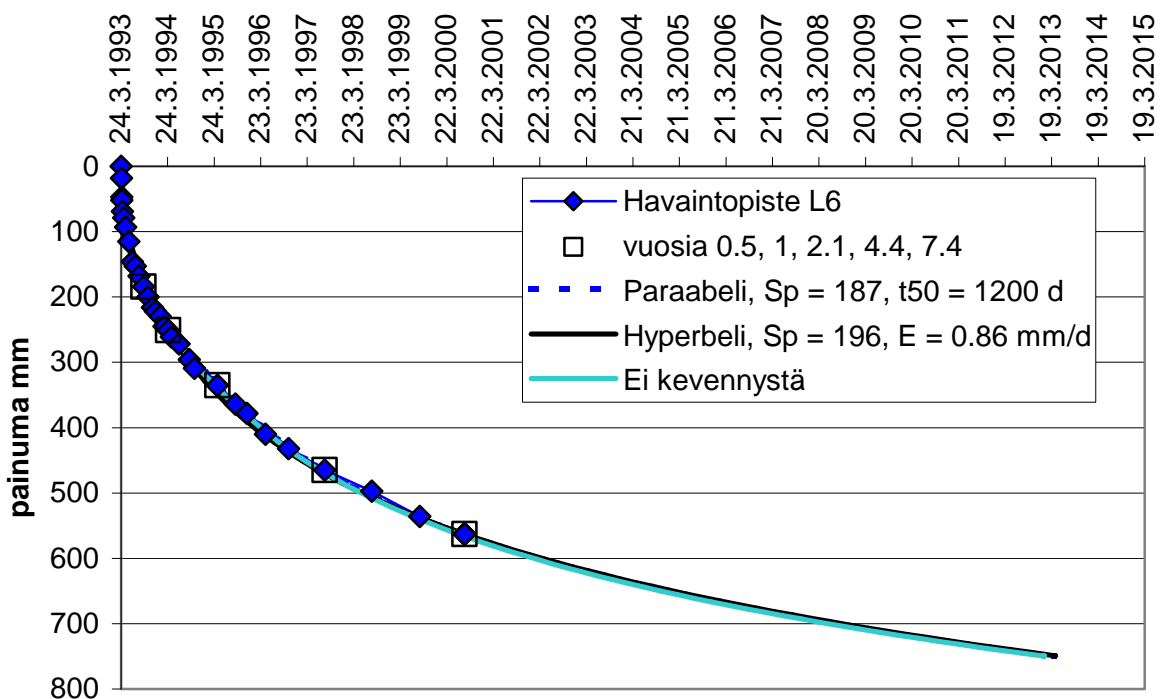
Havaintopiste L6

● 1-puol. kl	H	w	m (b = 0)	m	alkupai.	t0 (d)	pain. t (a)	tod. t
○ 2-puol. kl	21	65	8.3...14	7	70	9	20	20
input				80				
	Sp	t50/E	rs	B	c _v	pain. 20	virh. mm	
Paraabeli	187	1200	112	0.062	12.2	749	ei havaint.	
Hyperbeli	196	0.86	107	0.065		748	ei havaint.	



Aika-Painumapotentialiaali kuvaaja

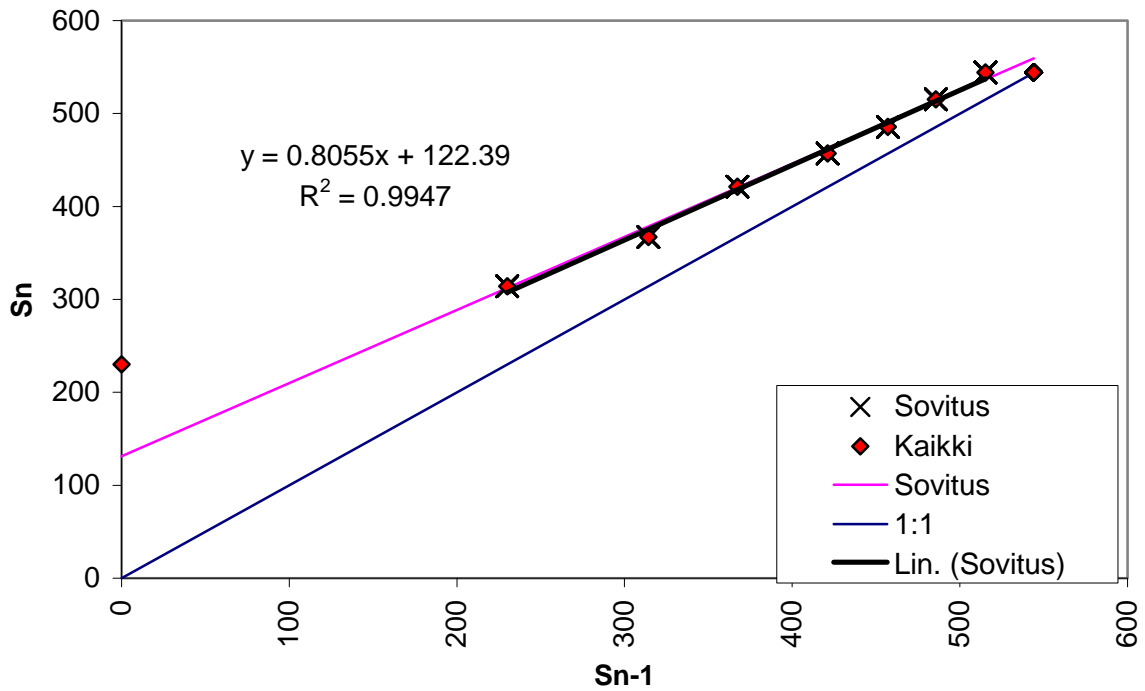
Aika-Painuma kuvaaja



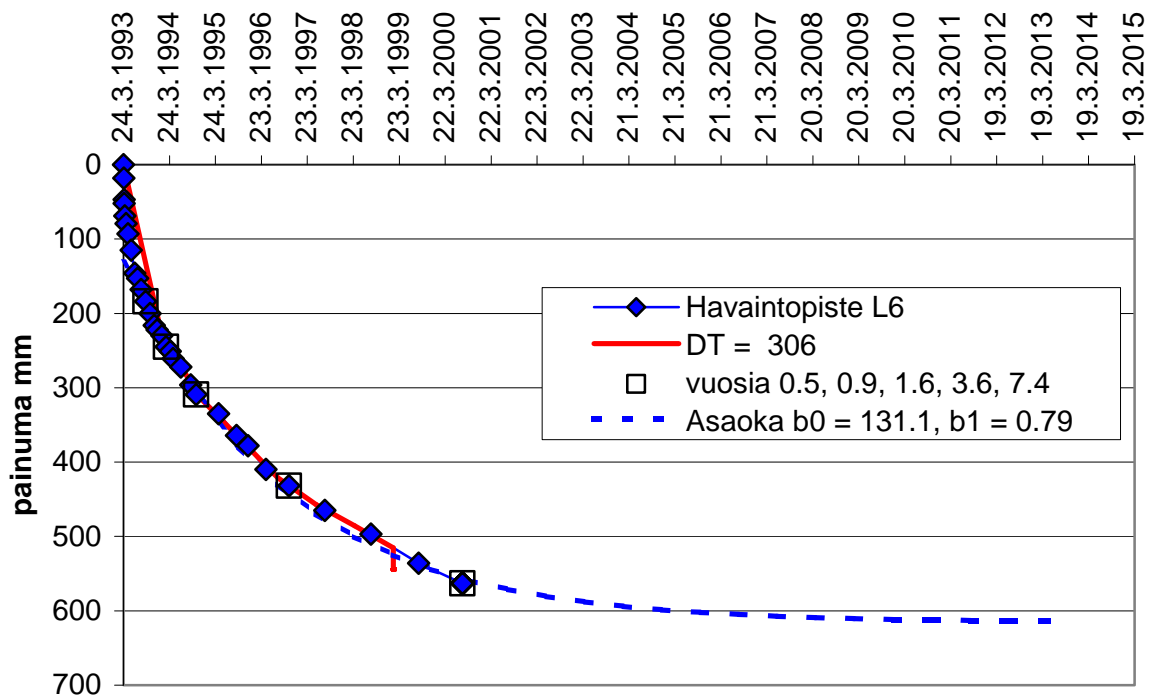


pain. t (a)	tod. t
20	20.1

input				output			
	β_0	β_1	t	Prim. Pain.		pain20.1	virh. mm
Asaoka	131.1	0.787	306.00	616		614	ei havaint.
	131.1	0.787	306.00				



Aika-Painuma kuvaaja





pain. t (a)

tod. t

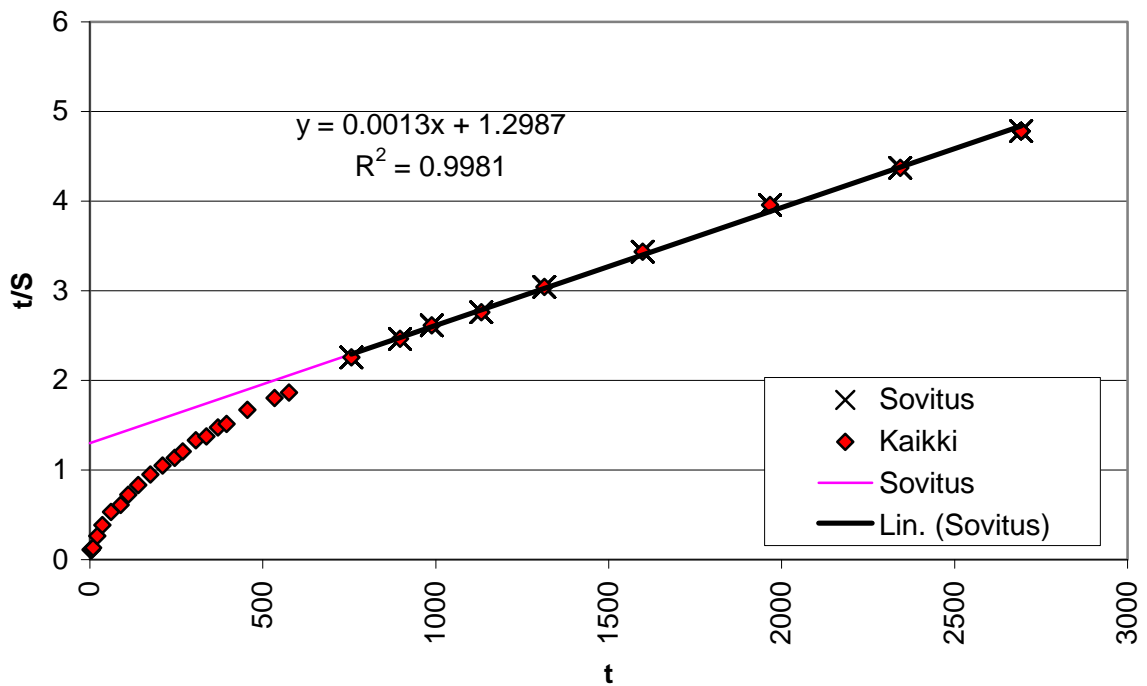
20

20

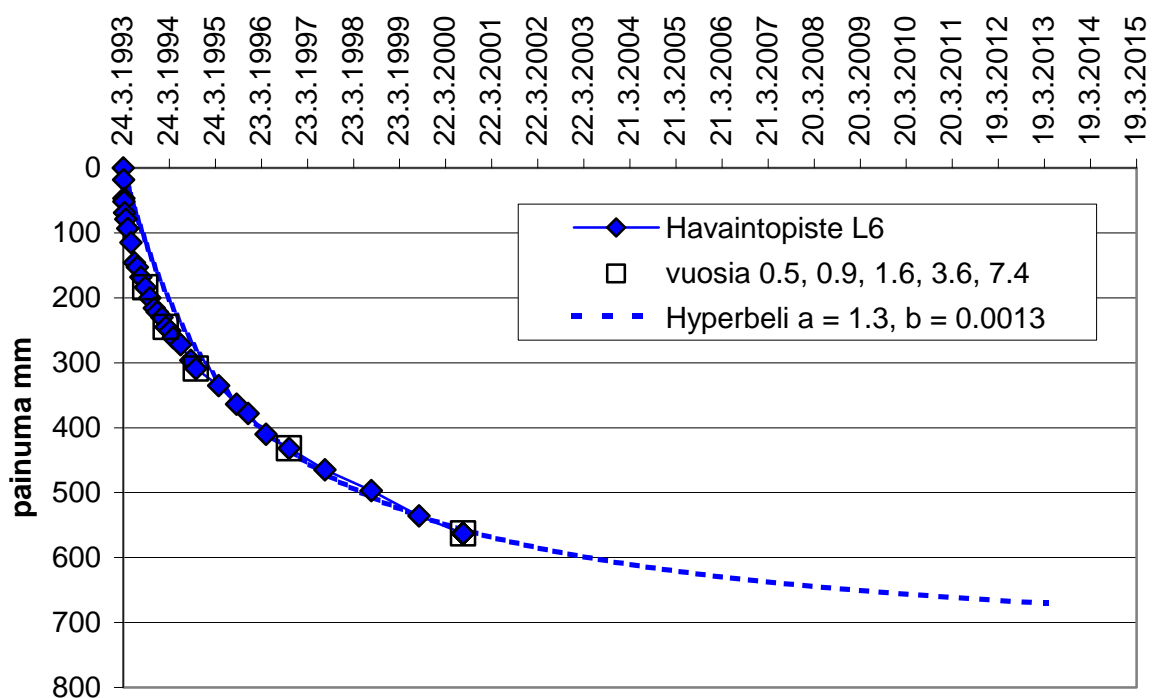
input

output

	a	b	Painuma	pain20	virh. mm
Hyperbeli	1.30	1.31E-03	761	670	ei havaint.



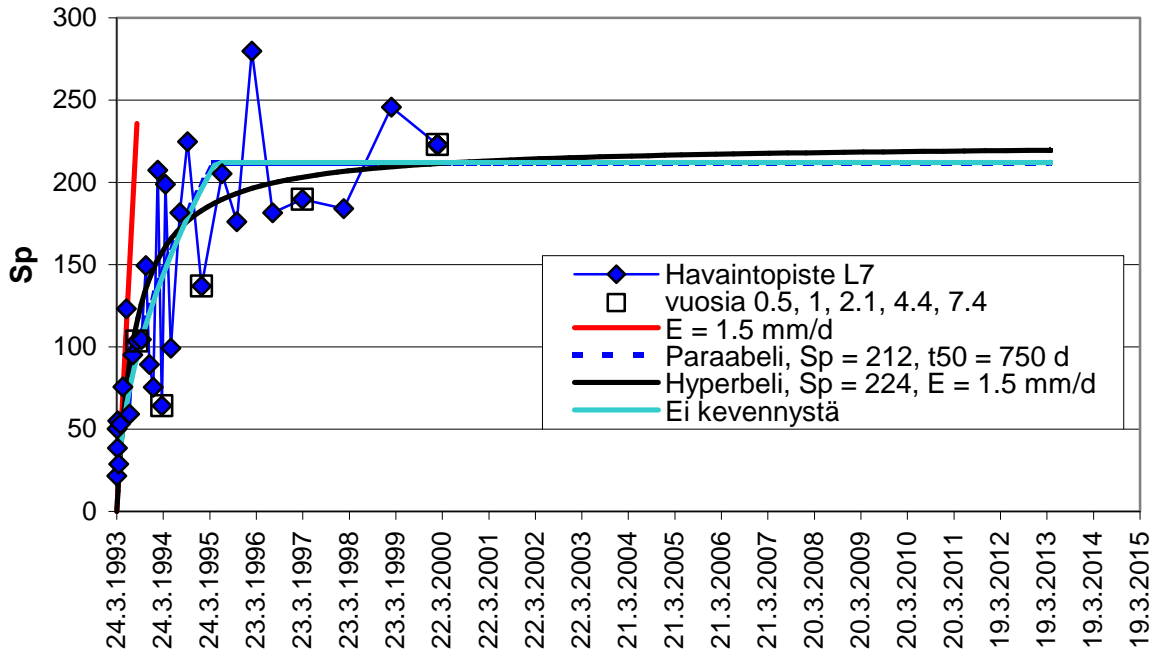
Aika-Painuma kuvaaja



Koepenger, Murro 7,4 v havainnot

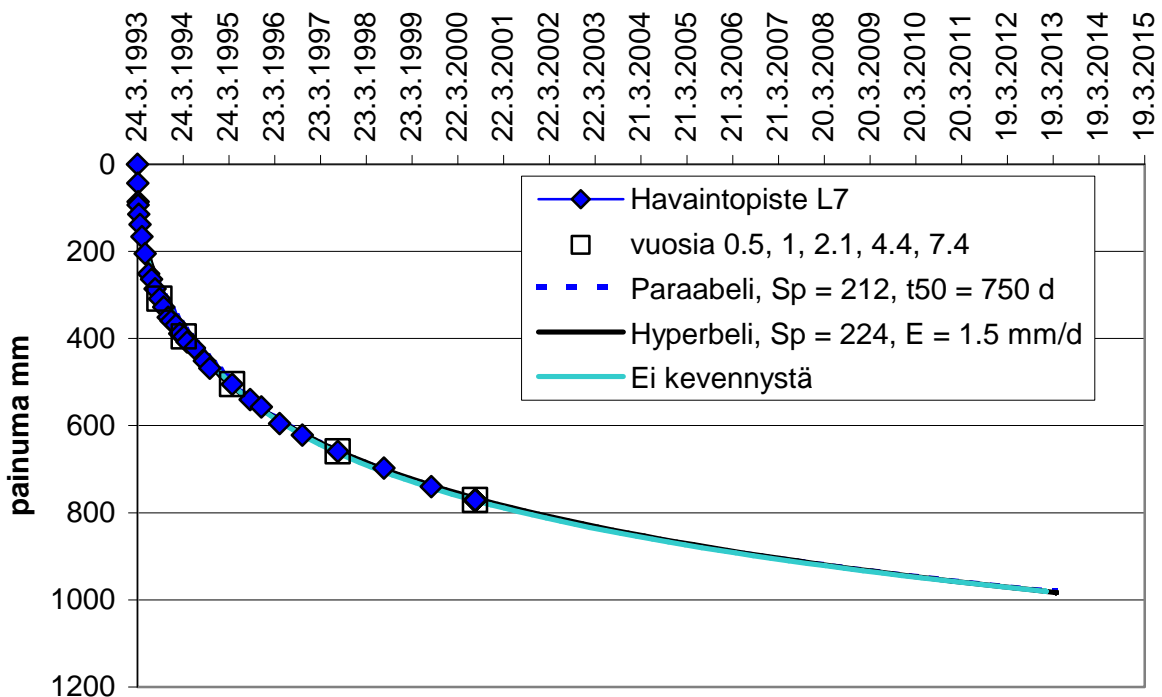
Havaintopiste L7

● 1-puol. kl	H	w	m (b = 0)	m	alkupai.	t0 (d)	pain. t (a)	tod. t
○ 2-puol. kl	21	65	8.3...14	7	120	9	20	20
input				80				
	Sp	t50/E	rs	B	c _v	pain. 20	virh. mm	
Paraabeli	212	750	99	0.071	19.5	980	ei havaint.	
Hyperbeli	224	1.50	94	0.075		982	ei havaint.	



Aika-Painumapotentiaali kuvaaja

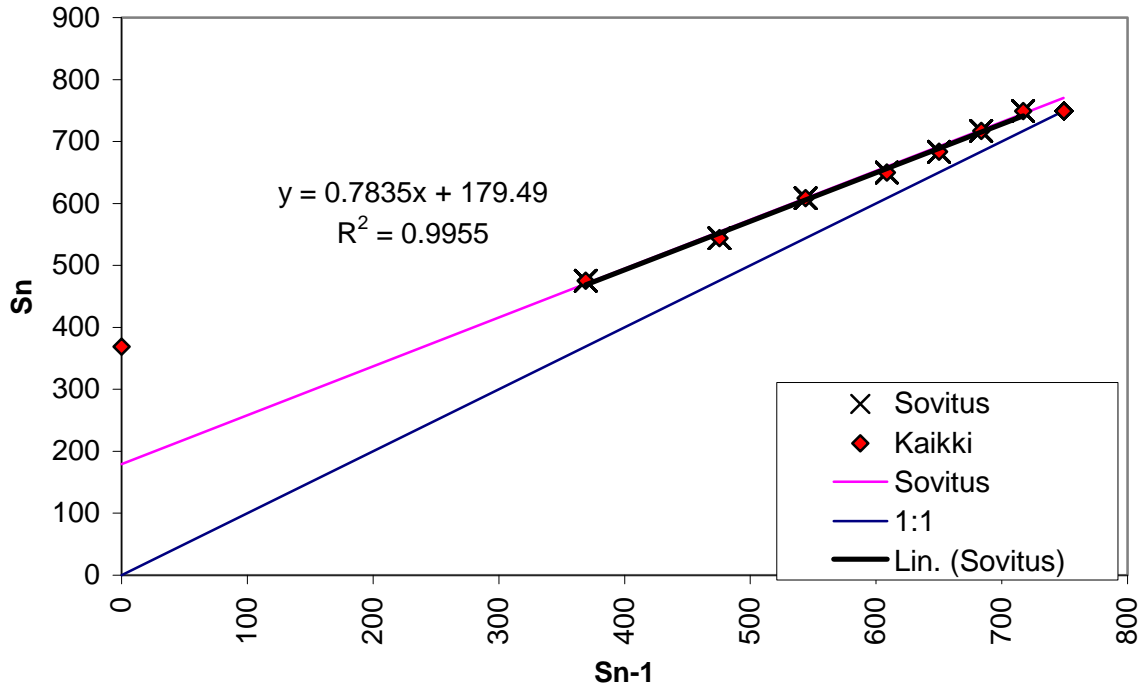
Aika-Painuma kuvaaja



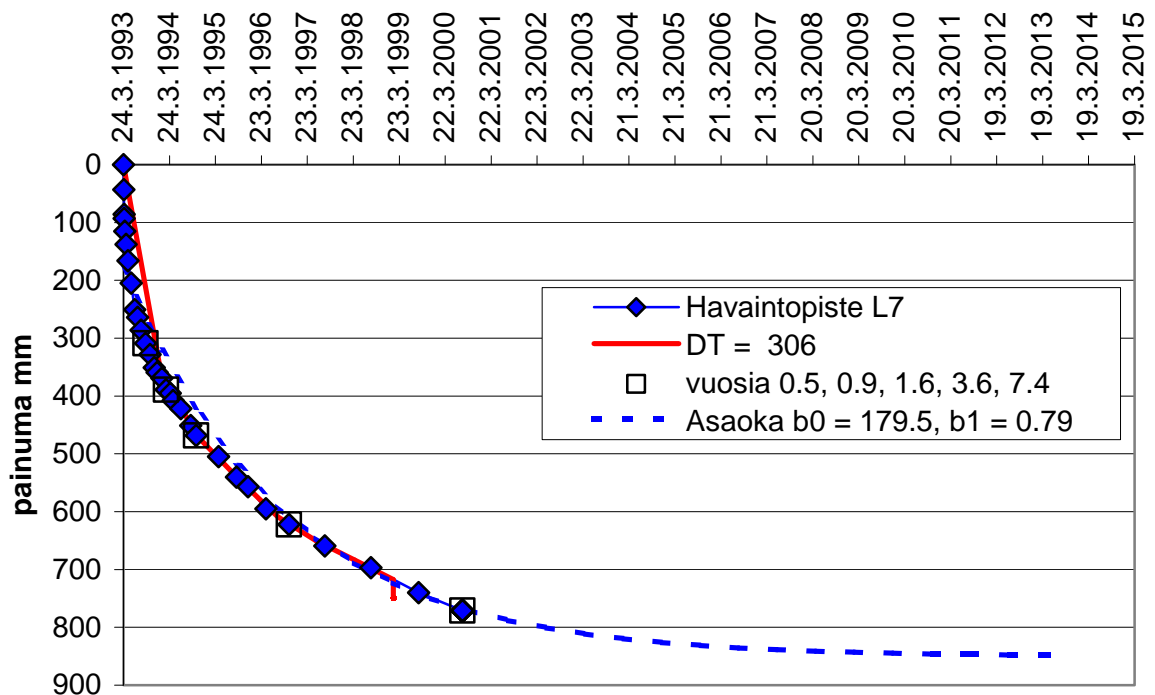


pain. t (a)	tod. t
20	20.1

input				output			
	β_0	β_1	t	Prim. Pain.		pain20.1	virh. mm
Asaoka	179.5	0.789	306.00	851		848	ei havaint.
	179.5	0.789	306.00				



Aika-Painuma kuvaaja





pain. t (a)

tod. t

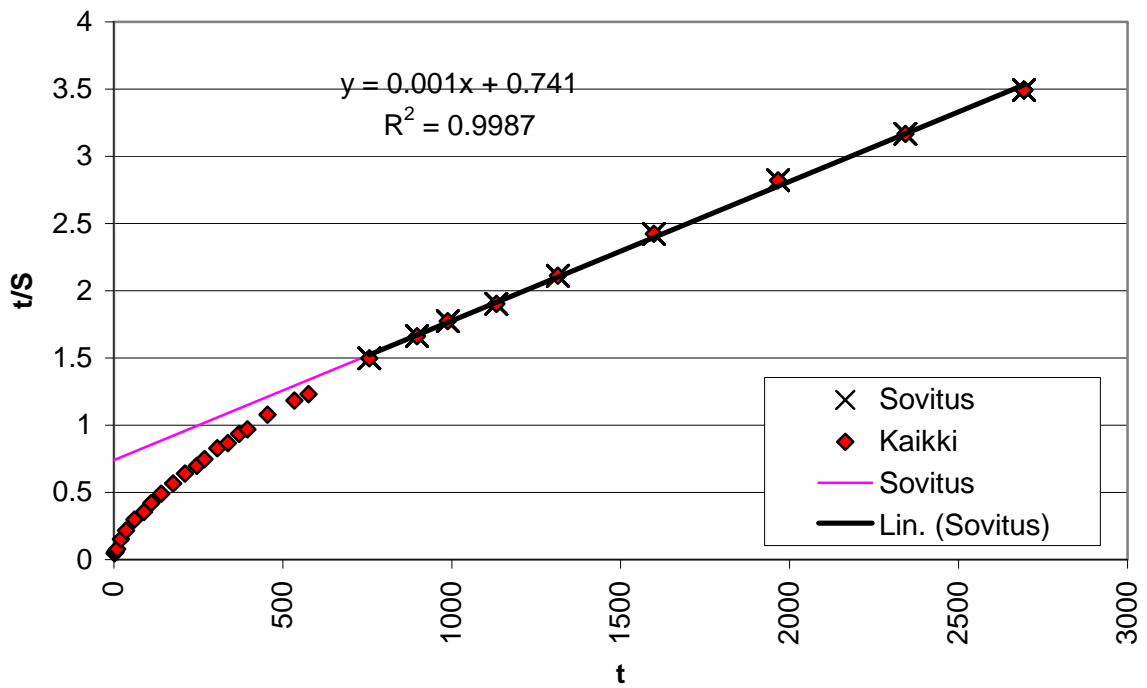
20

20

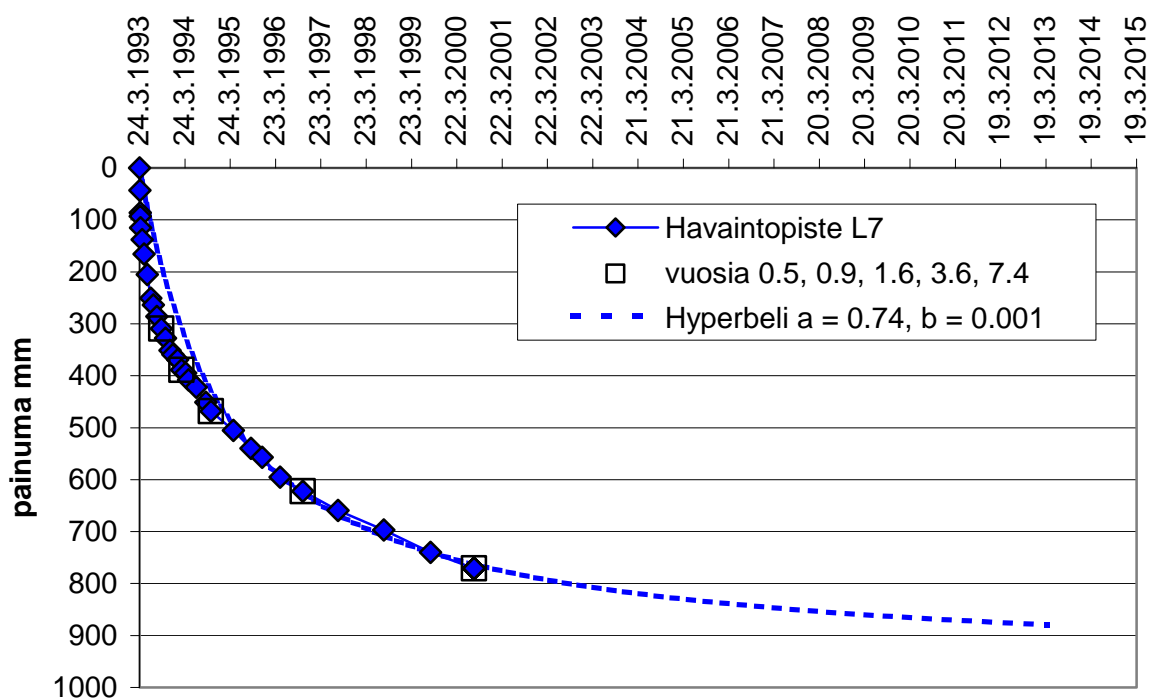
input

output

	a	b	Painuma		pain20	virh. mm
Hyperbeli	0.74	1.04E-03	965		879	ei havaint.



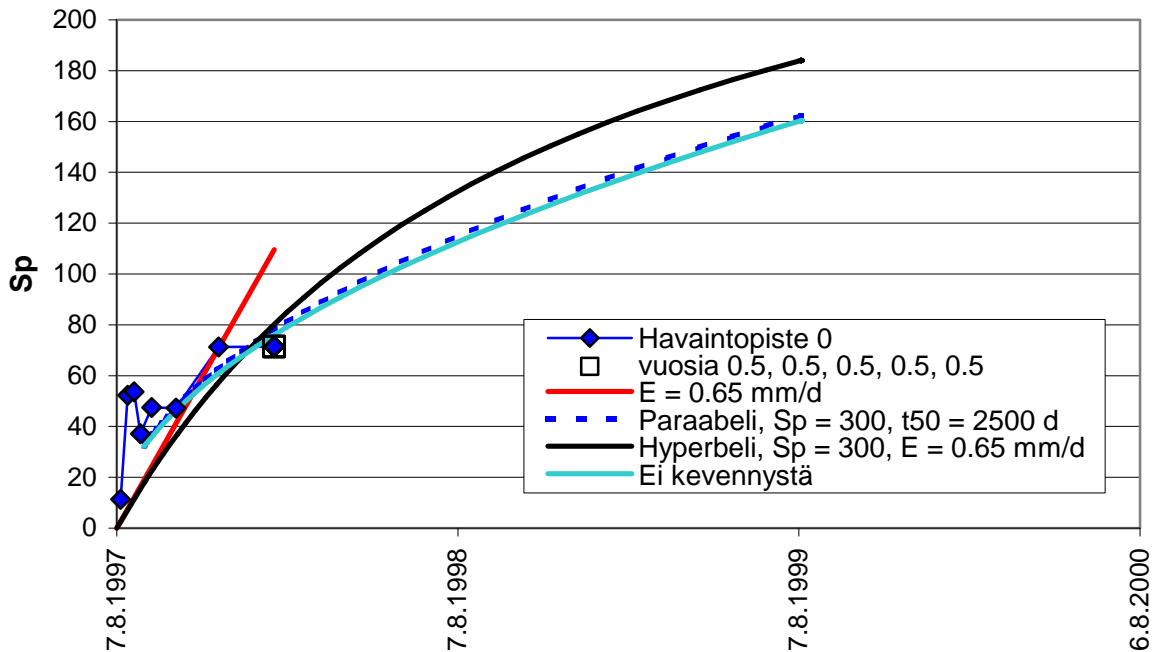
Aika-Painuma kuvaaja



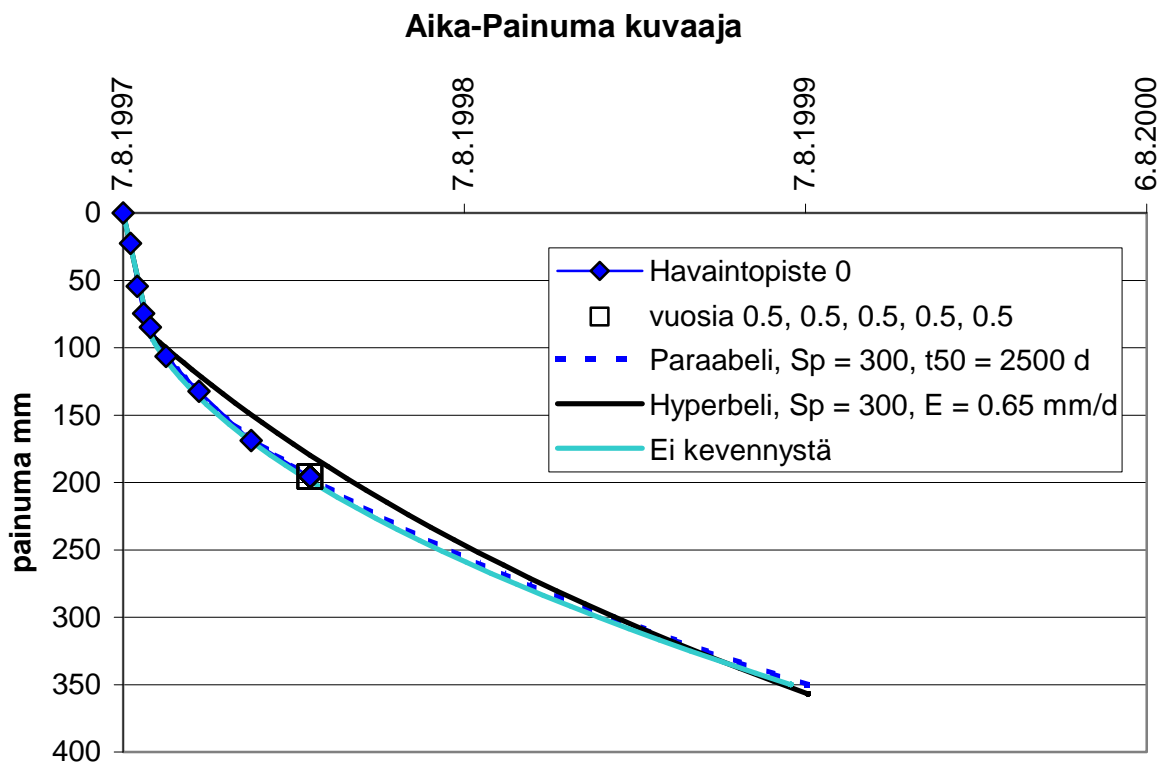
Koepenger, Haarajoki mp, 6 kk

Havaintopiste 0

○ 1-puol. kl	H	w	m (b = 0)	m	alkupai.	t0 (d)	pain. t (a)	tod. t
● 2-puol. kl	19	100	5.4...9.1	5	90	29	3.55	3.55
input				80				
	Sp	t50/E	rs	B	c _v	pain. 3.55	virh. mm	
Paraabeli	300	2500	63	0.079	2.6	457	ei havaint.	
Hyperbeli	300	0.65	63	0.079		473	ei havaint.	



Aika-Painumapotentialiaali kuvaaja

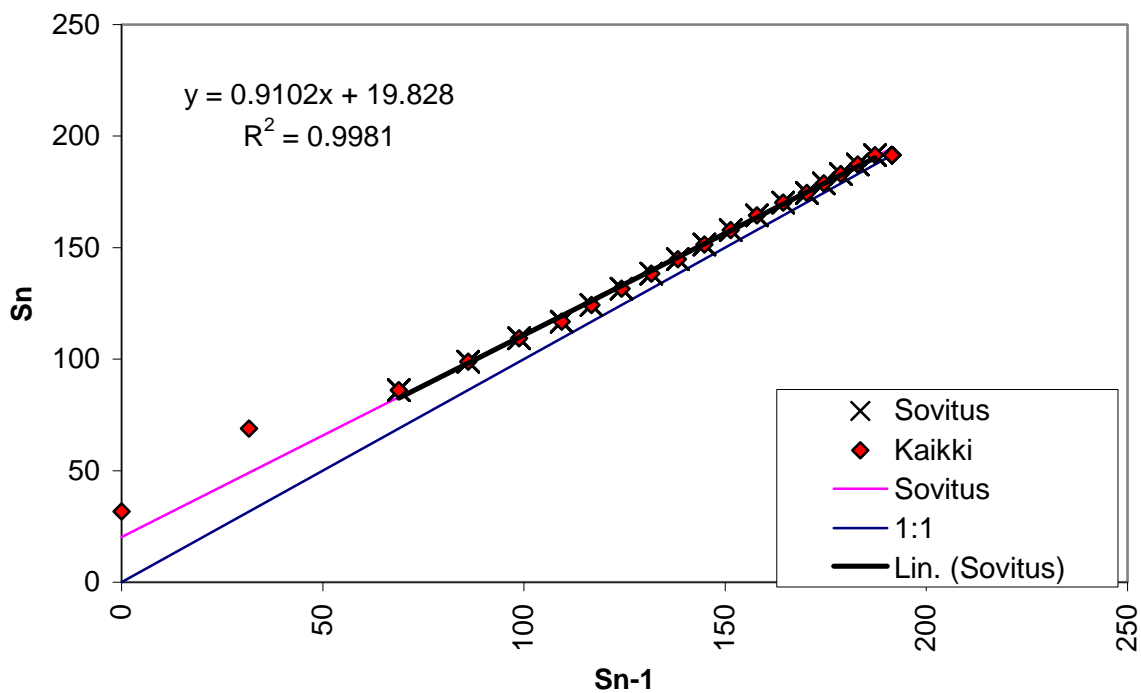


Aika-Painuma kuvaaja

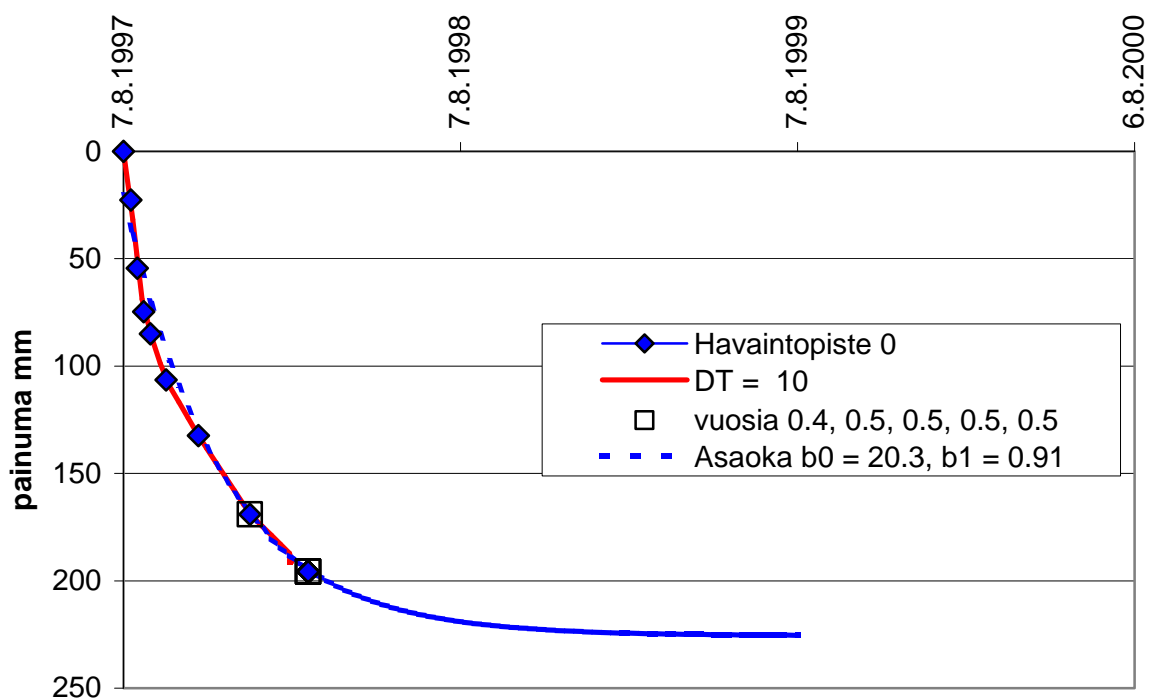


pain. t (a)	tod. t
3.55	3.6

input				output			
	β_0	β_1	t	Prim. Pain.		pain3.6	virh. mm
Asaoka	20.3	0.910	10.00	226		226	ei havaint.
	20.3	0.910	10.00				



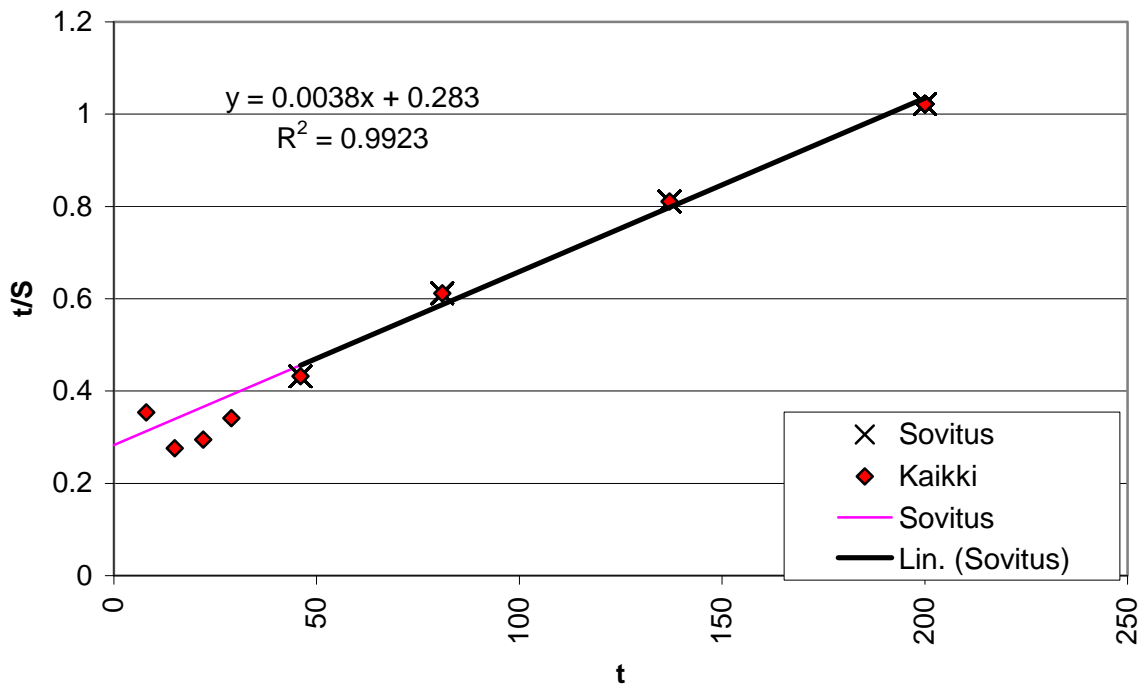
Aika-Painuma kuvaaja



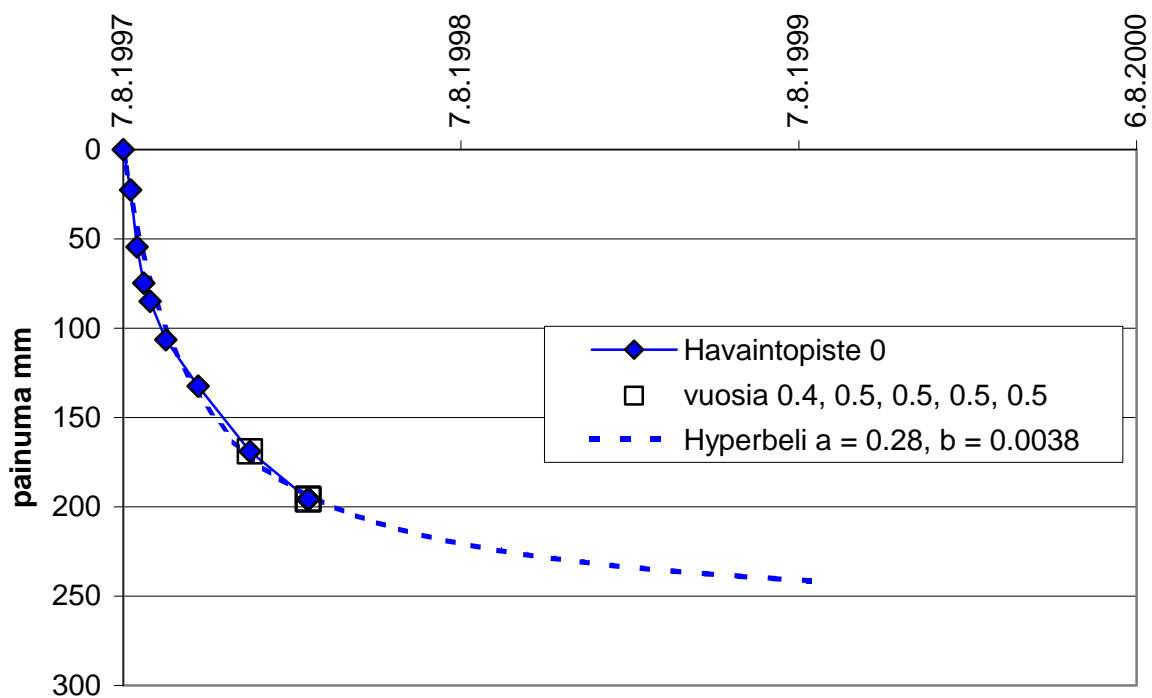


pain. t (a)	tod. t
3.55	3.55

input			output			
	a	b	Painuma		pain3.55	virh. mm
Hyperbeli	0.28	3.76E-03	266		251	ei havaint.



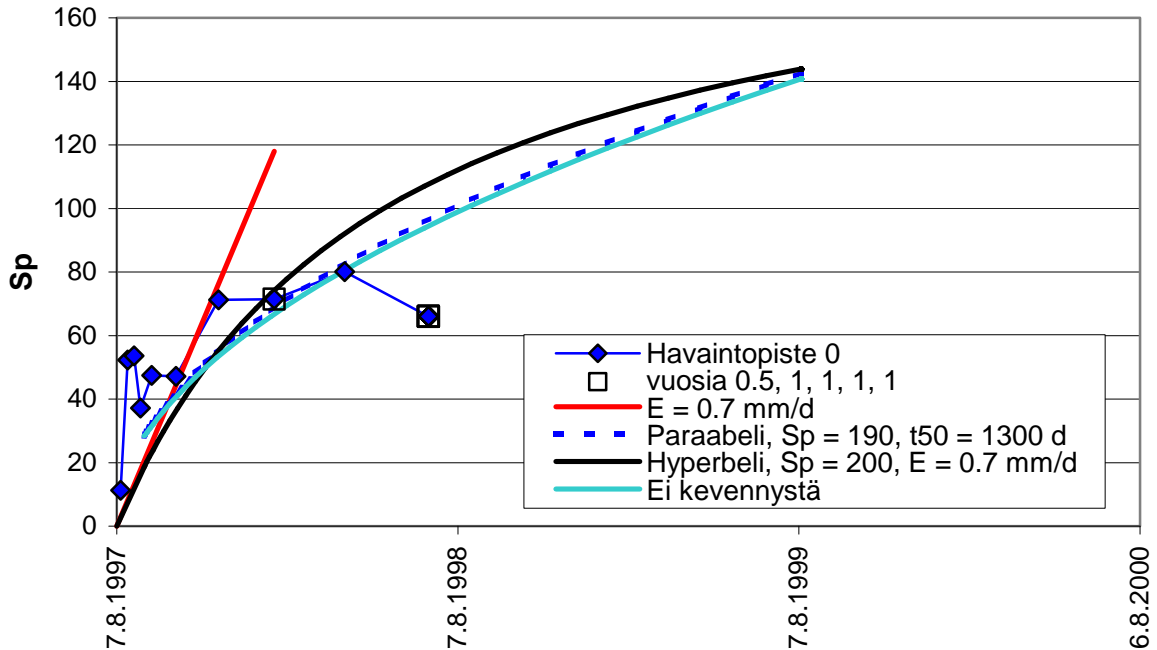
Aika-Painuma kuvaaja



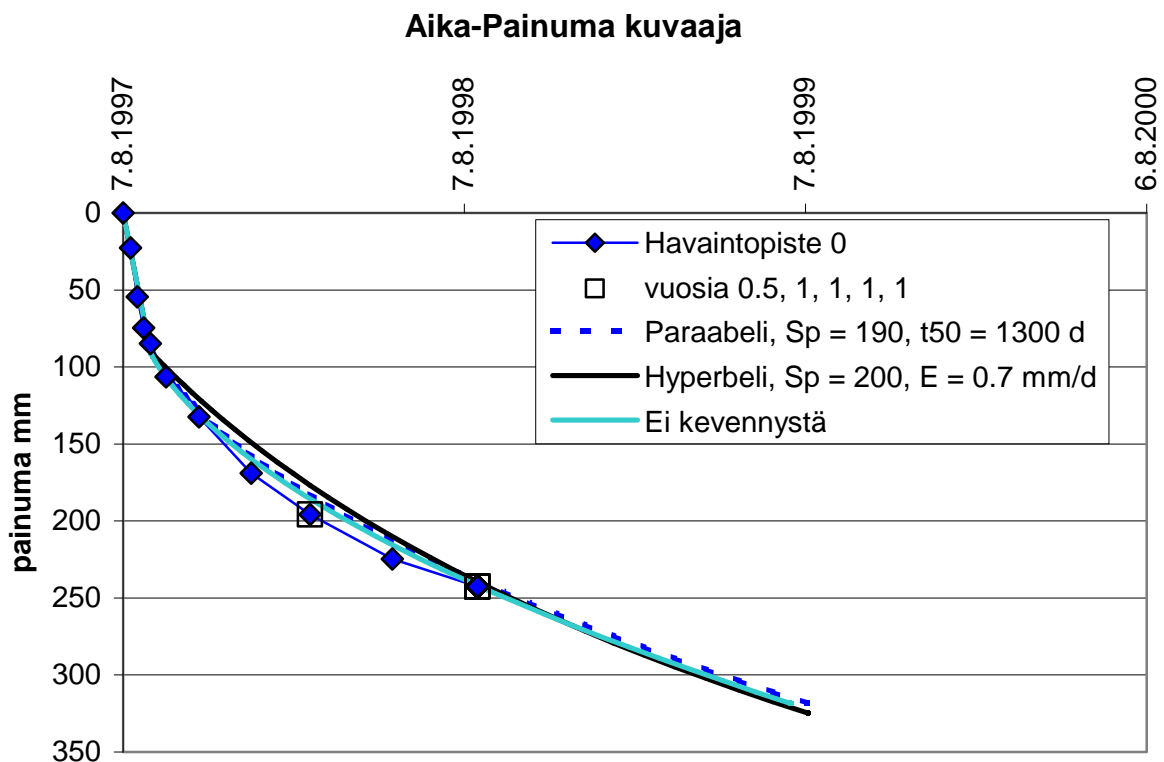
Koepenger, Haarajoki mp, 1 v

Havaintopiste 0

○ 1-puol. kl	H	w	m (b = 0)	m	alkupai.	t0 (d)	pain. t (a)	tod. t
● 2-puol. kl	19	100	5.4...9.1	5	90	29	3.55	3.55
input				80				
	Sp	t50/E	rs	B	c _v	pain. 3.55	virh. mm	
Paraabeli	190	1300	100	0.050	5.0	413	ei havaint.	
Hyperbeli	200	0.70	95	0.053		413	ei havaint.	



Aika-Painumapotentiaali kuvaaja

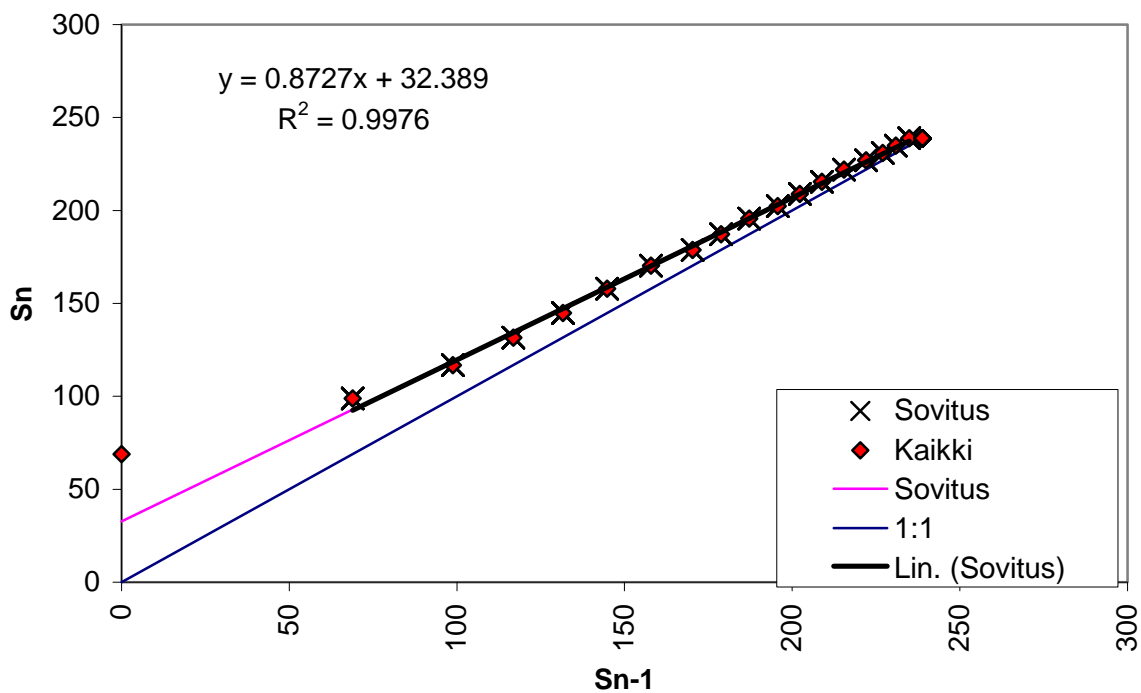


Aika-Painuma kuvaaja

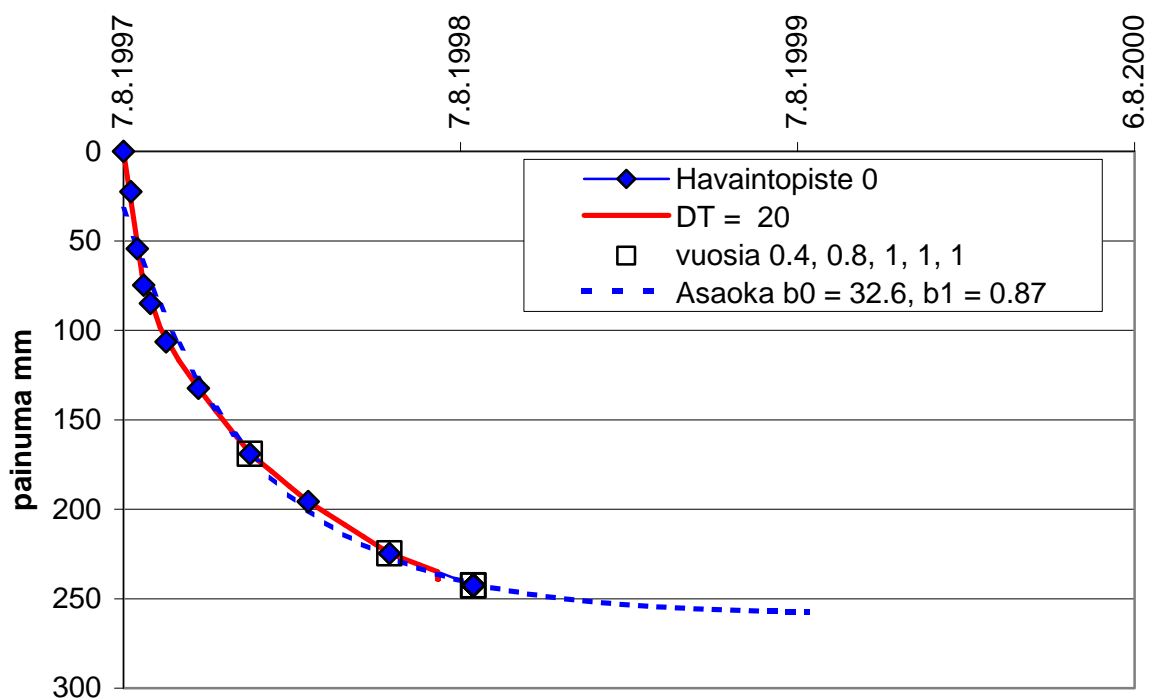


pain. t (a)	tod. t
3.55	3.6

input				output			
	β_0	β_1	t	Prim. Pain.		pain3.6	virh. mm
Asaoka	32.6	0.874	20.00	259		259	ei havaint.
	32.6	0.874	20.00				



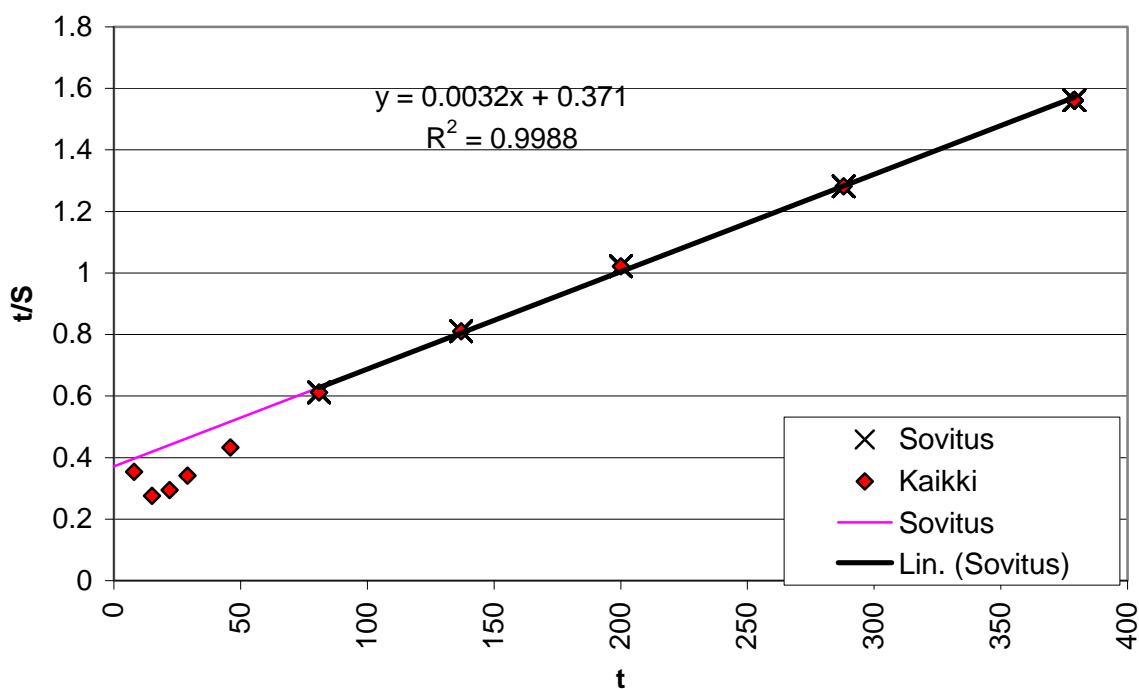
Aika-Painuma kuvaaja



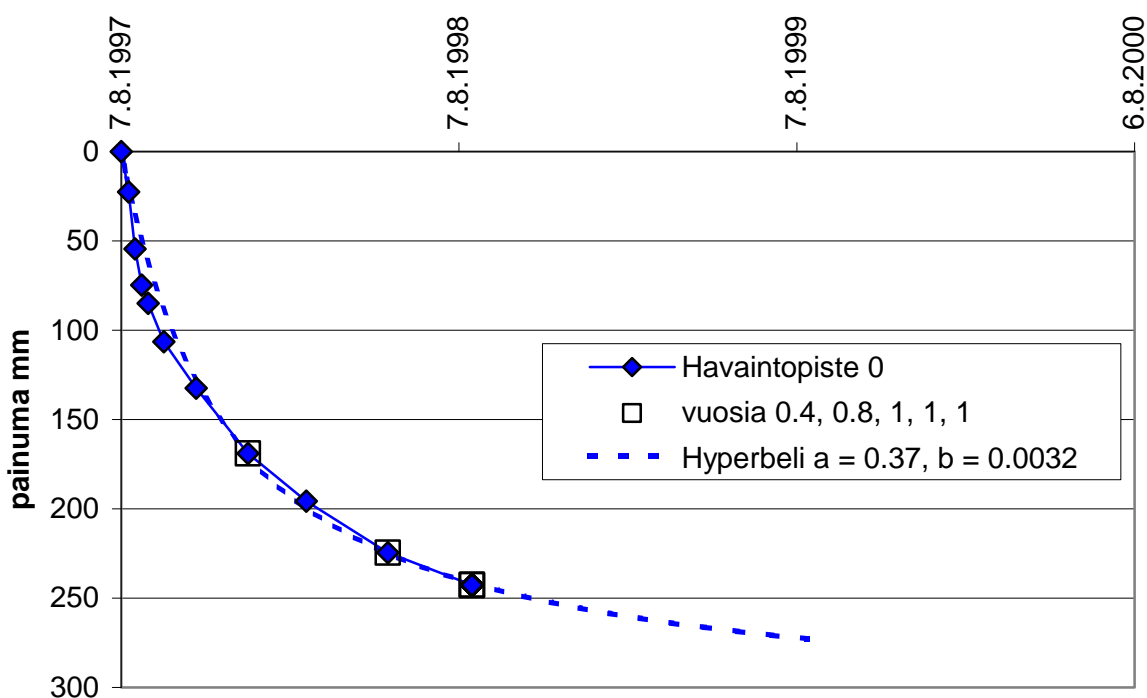


pain. t (a)	tod. t
3.55	3.55

input			output			
	a	b	Painuma		pain3.55	virh. mm
Hyperbeli	0.37	3.17E-03	316		290	ei havaint.



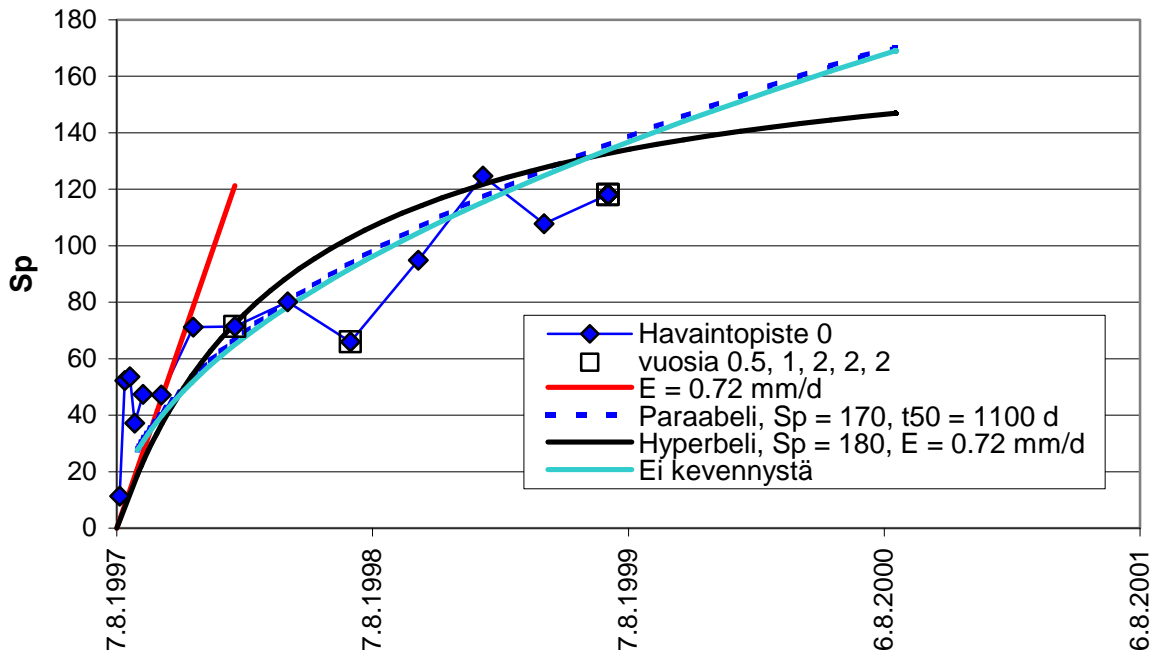
Aika-Painuma kuvaaja



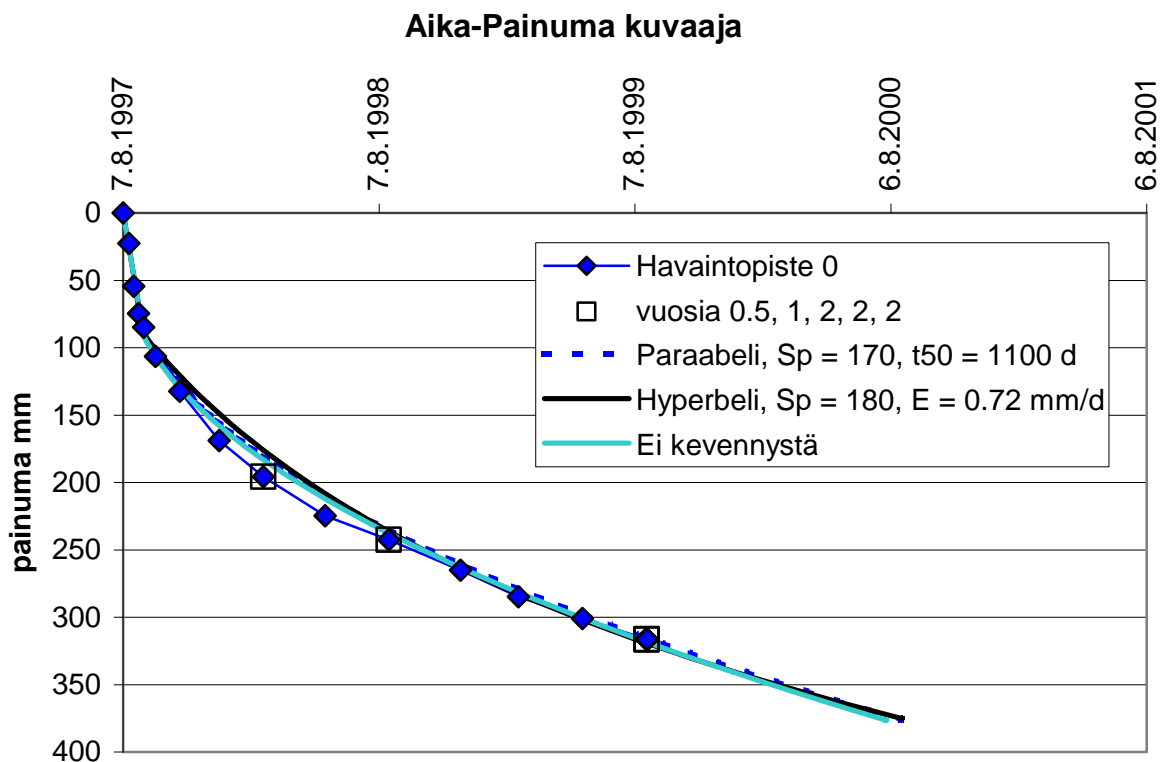
Koepenger, Haarajoki mp, 2 v

Havaintopiste 0

○ 1-puol. kl	H	w	m (b = 0)	m	alkupai.	t0 (d)	pain. t (a)	tod. t
● 2-puol. kl	19	100	5.4...9.1	5	90	29	3.55	3.55
input				80				
	Sp	t50/E	rs	B	c _v	pain. 3.55	virh. mm	
Paraabeli	170	1100	112	0.045	5.9	403	ei havaint.	
Hyperbeli	180	0.72	106	0.047		398	ei havaint.	

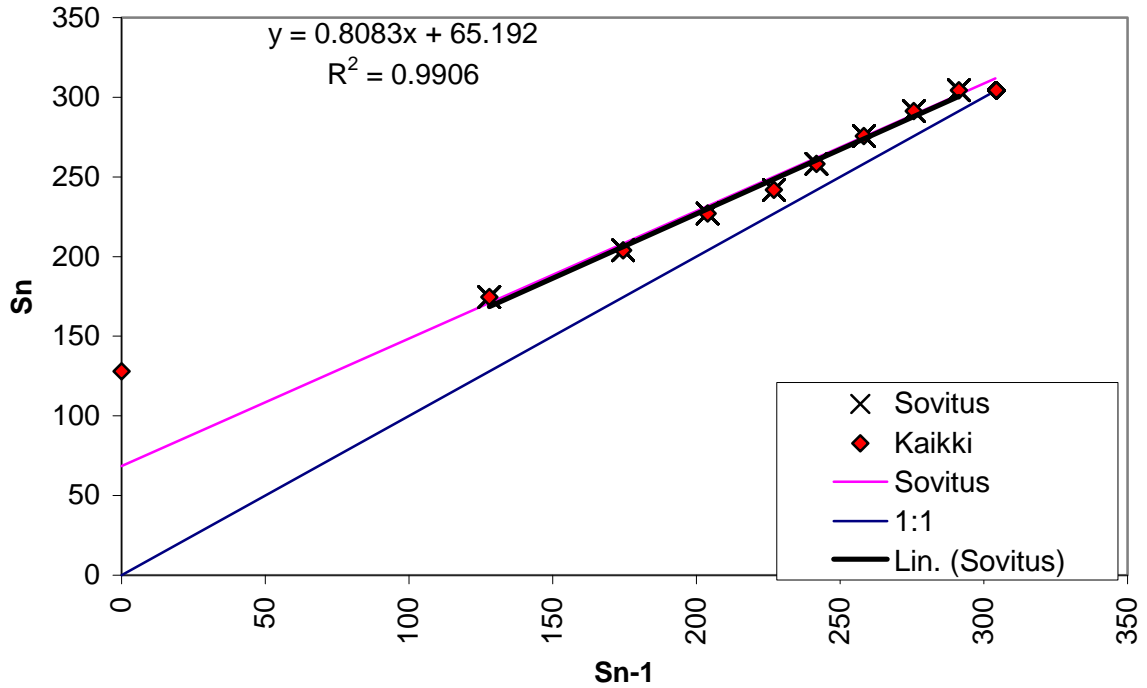


Aika-Painumapotentialiaali kuvaaja

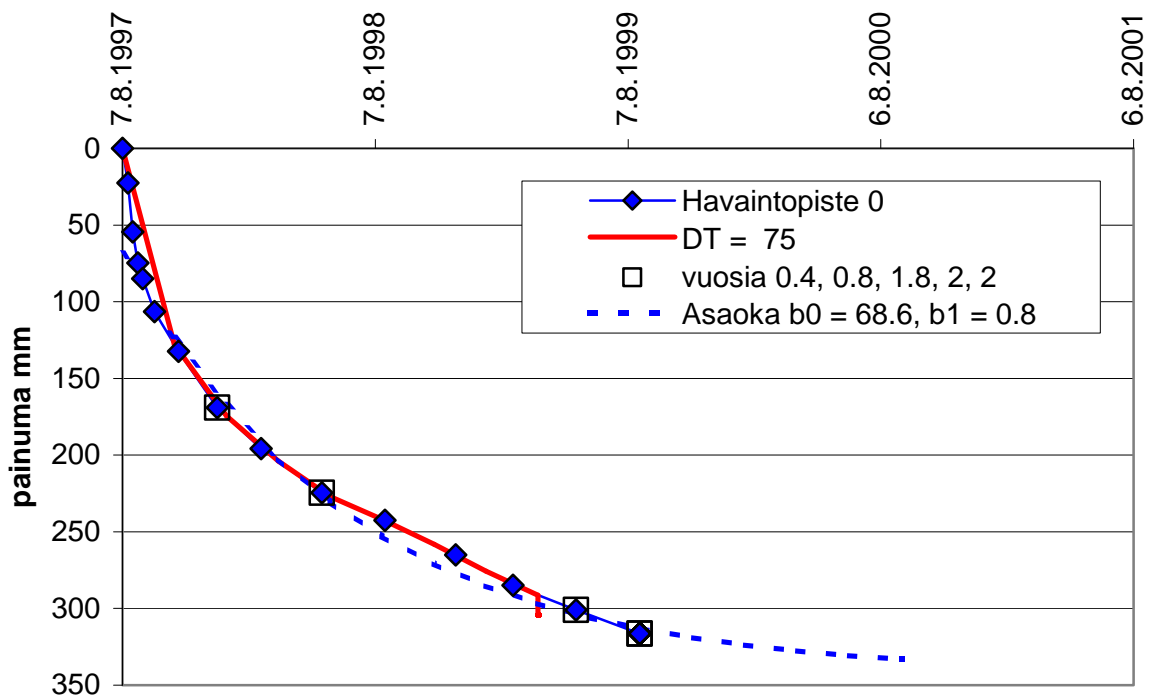


Aika-Painuma kuvaaja

Painumaennuste		Asaoka		LIITE III / s. 8		
Koepenger,Haarajoki mp, 2 v				Havaintopiste 0		
				pain. t (a)	tod. t	
				3.55	3.5	
input			output			
	β_0	β_1	t	Prim. Pain.	pain3.5	virh. mm
Asaoka	68.6	0.800	75.00	343	337	ei havaint.
	68.6	0.800	75.00			



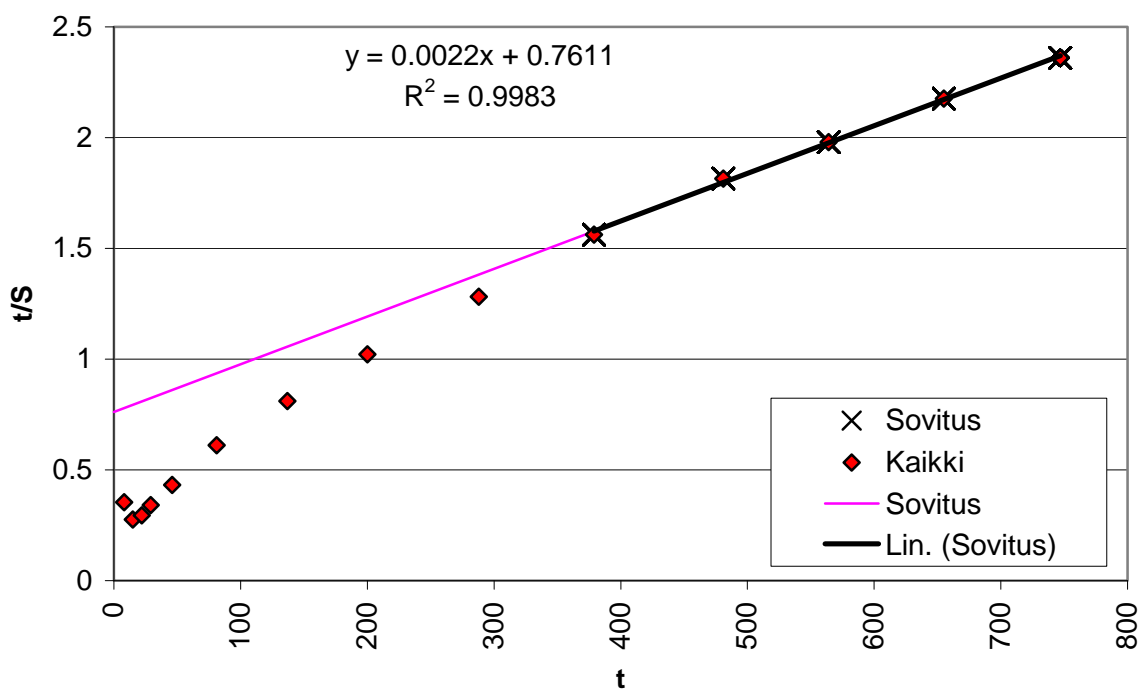
Aika-Painuma kuvaaja



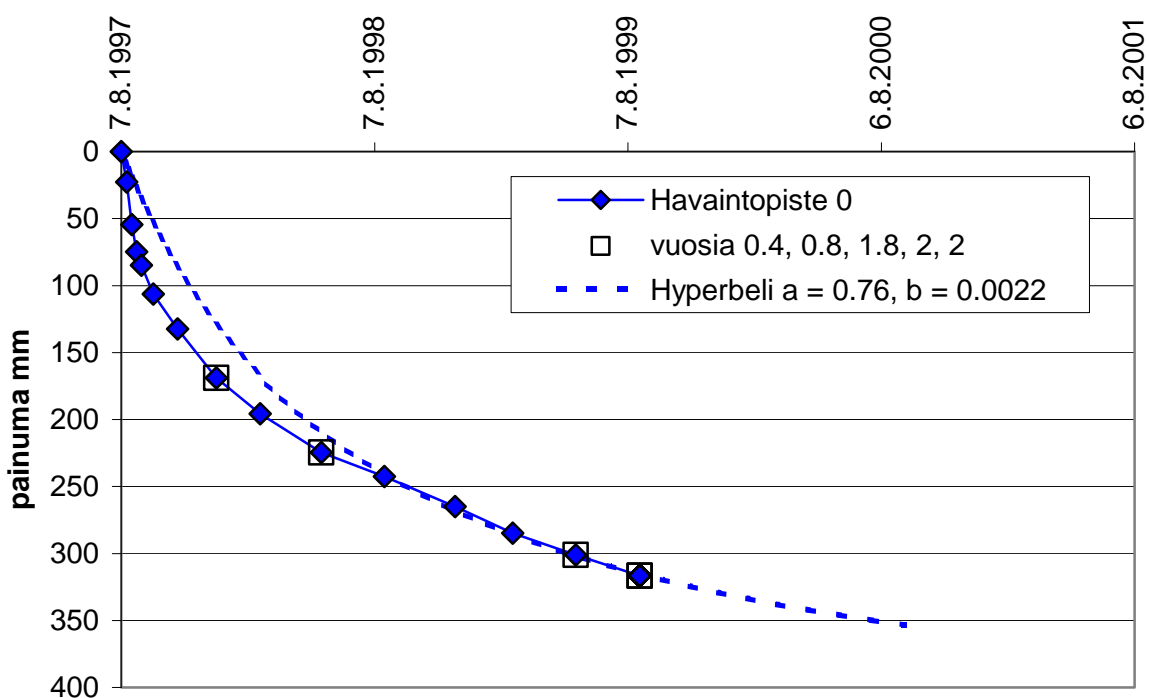


pain. t (a)	tod. t
3.55	3.55

input			output			
	a	b	Painuma		pain3.55	virh. mm
Hyperbeli	0.76	2.15E-03	464		365	ei havaint.



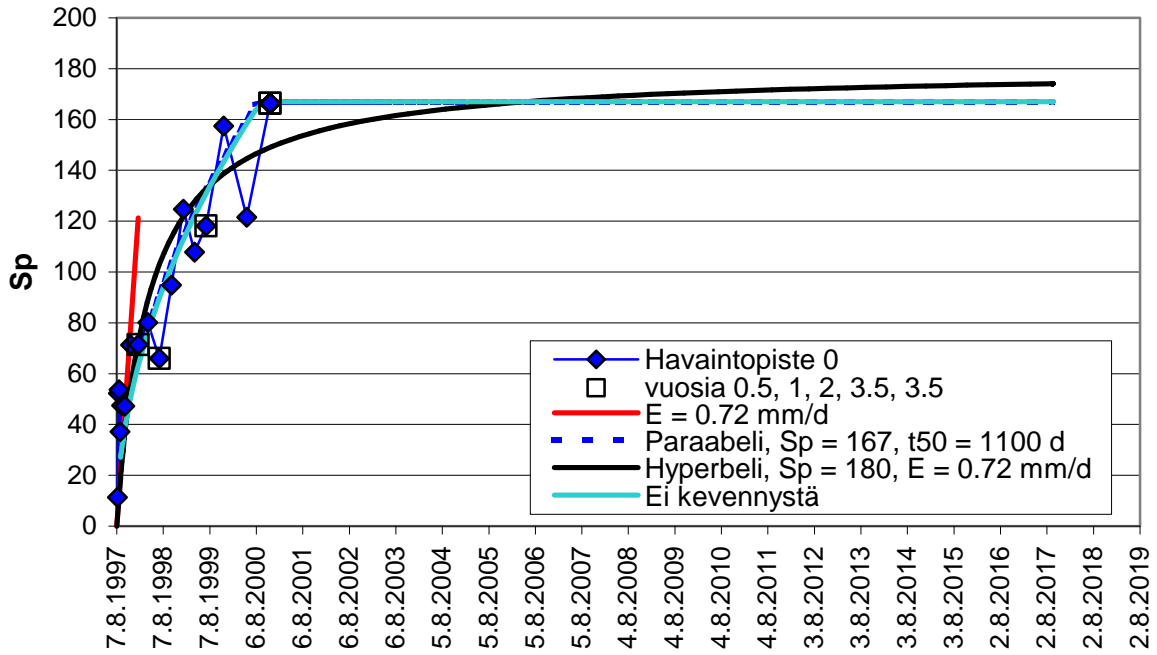
Aika-Painuma kuvaaja



Koepenger, Haarajoki mp, 3,5 v

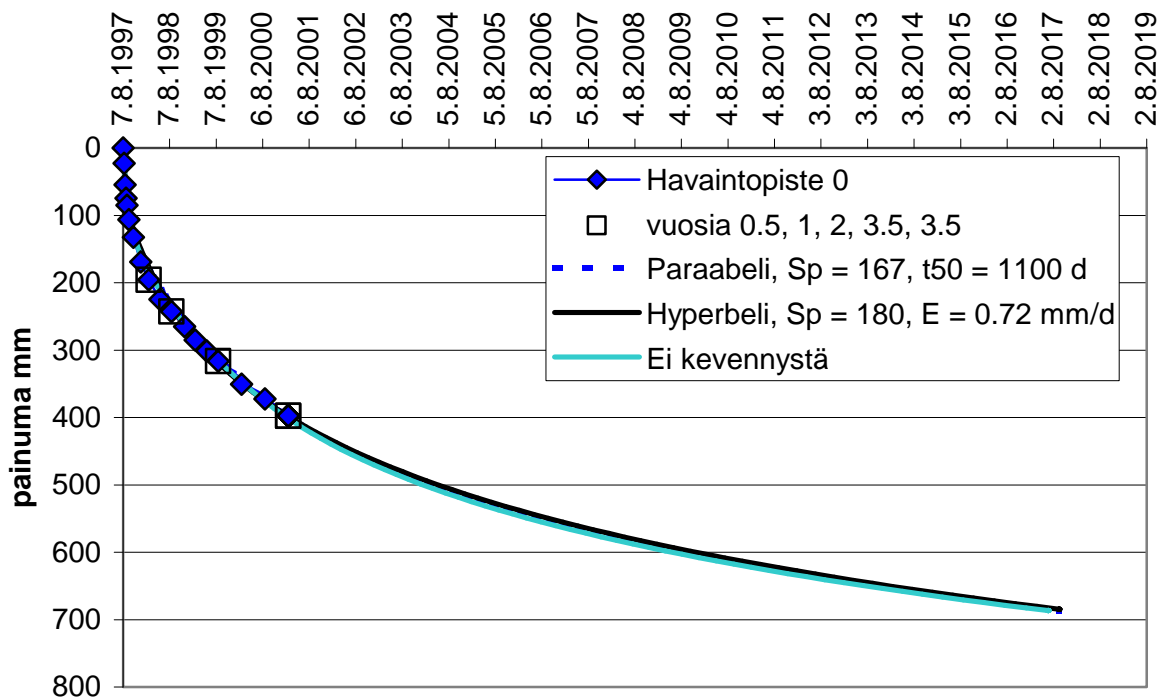
Havaintopiste 0

○ 1-puol. kl	H	w	m (b = 0)	m	alkupai.	t0 (d)	pain. t (a)	tod. t
● 2-puol. kl	19	100	5.4...9.1	5	90	29	20	20
input				80				
	Sp	t50/E	rs	B	c _v	pain. 20	virh. mm	
Paraabeli	167	1100	114	0.044	5.9	686	ei havaint.	
Hyperbeli	180	0.72	106	0.047		684	ei havaint.	



Aika-Painumapotentiaali kuvaaja

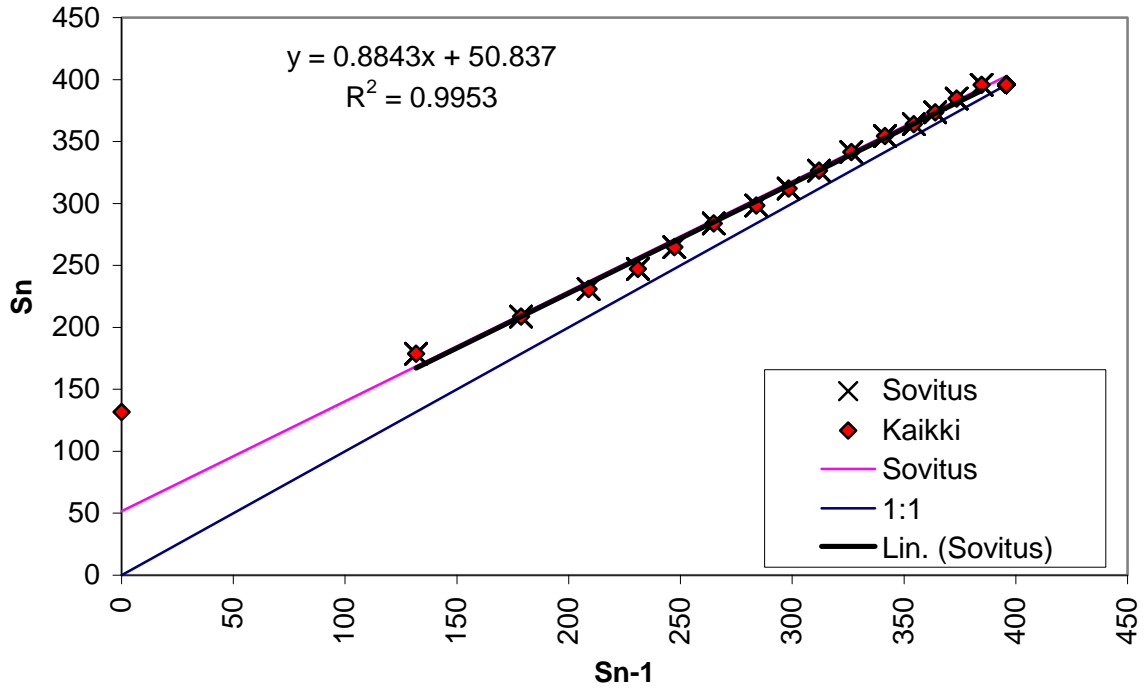
Aika-Painuma kuvaaja



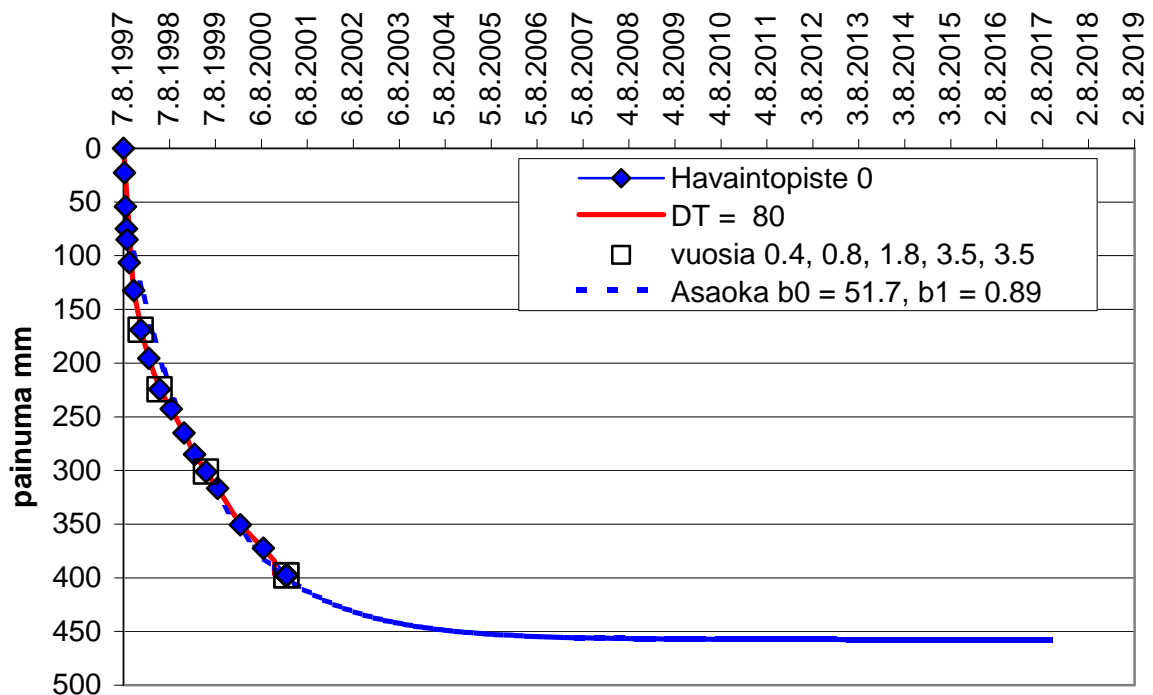


pain. t (a)	tod. t
20	19.9

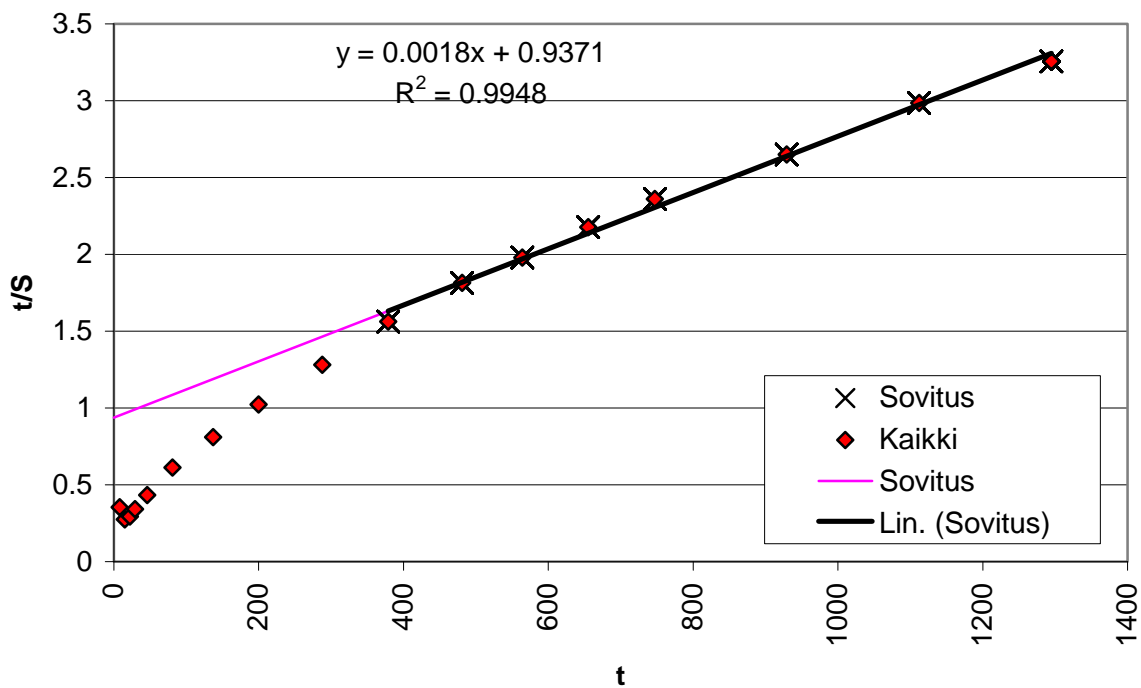
input				output			
	β_0	β_1	t	Prim. Pain.		pain19.9	virh. mm
Asaoka	51.7	0.887	80.00	458		458	ei havaint.
	51.7	0.887	80.00				



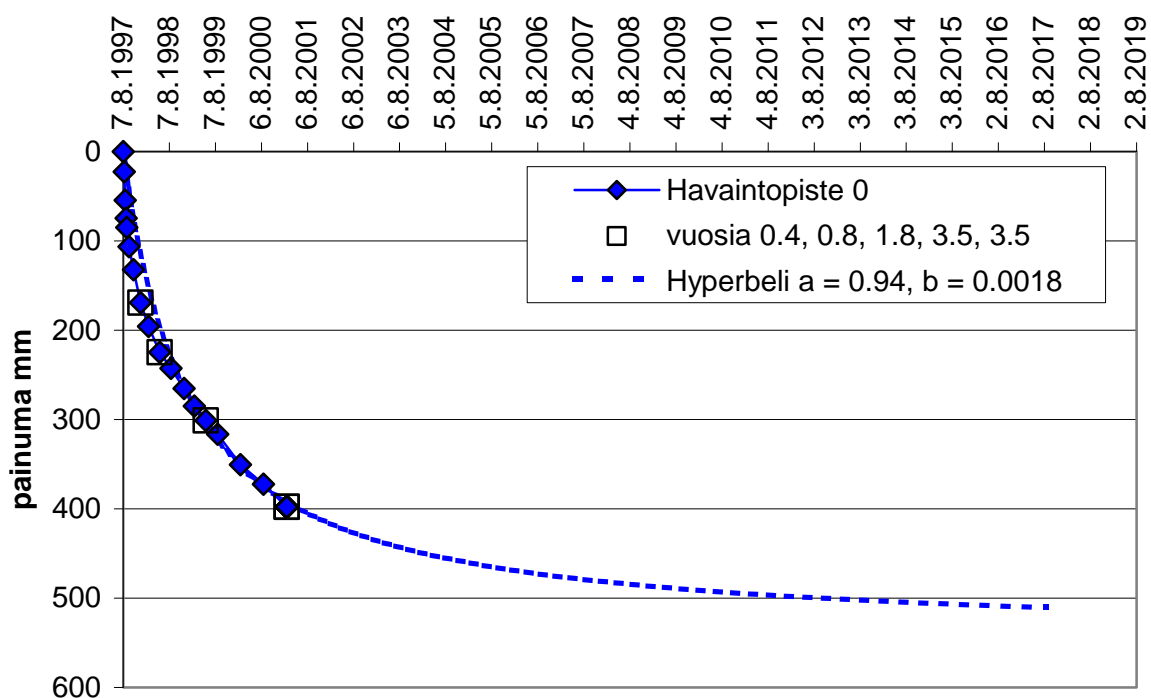
Aika-Painuma kuvaaja



Painumaennuste		Hyperbeli		LIITE III / s. 12	
Koepenger,Haarajoki mp, 3,5 v				Havaintopiste 0	
				pain. t (a)	tod. t
				20	20
input			output		
	a	b	Painuma		virh. mm
Hyperbeli	0.94	1.83E-03	546		ei havaint.



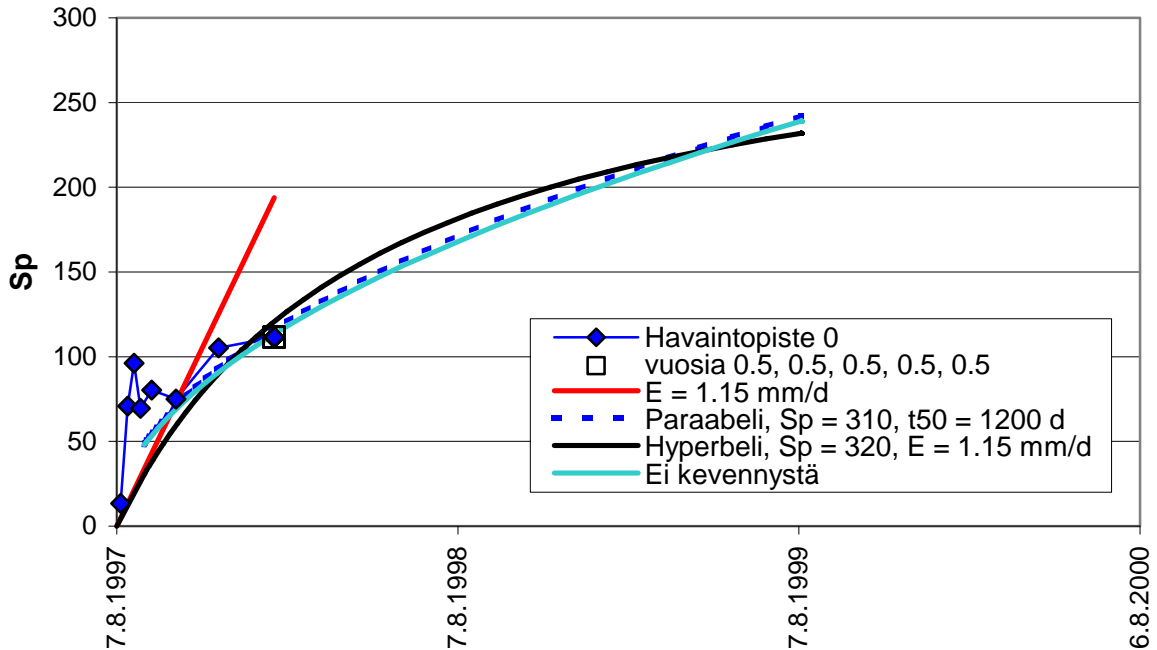
Aika-Painuma kuvaaja



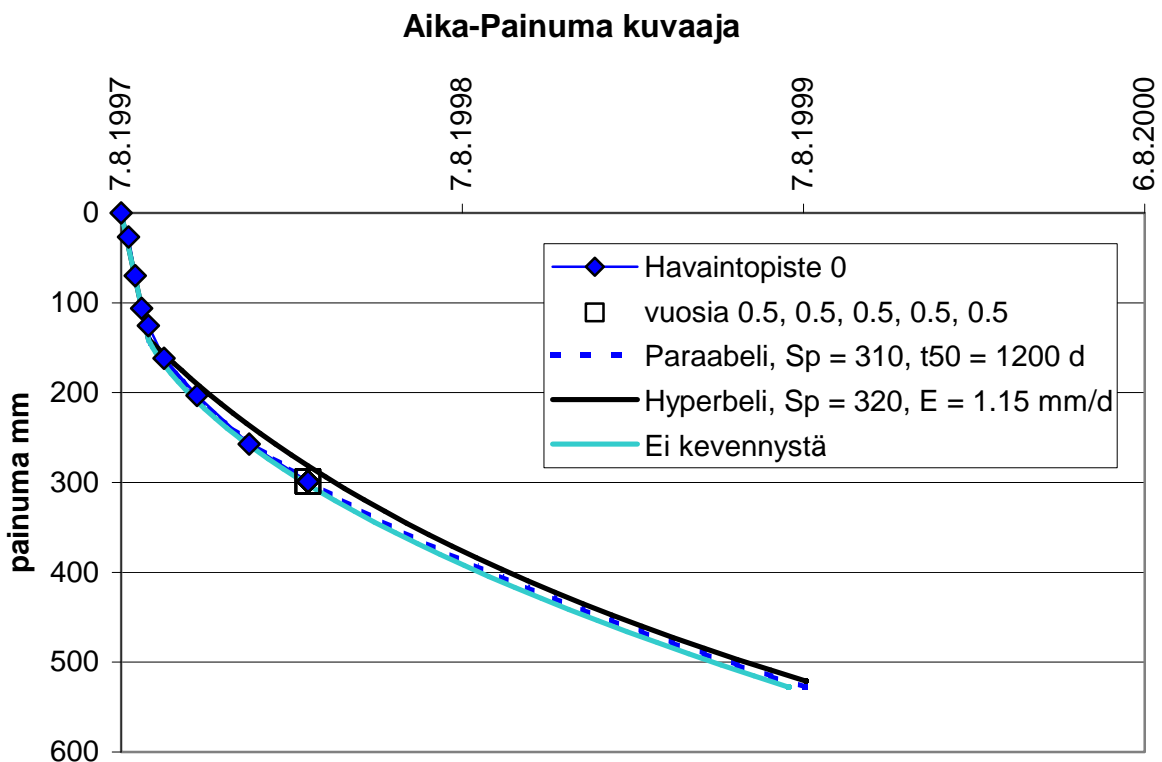
Koepenger, Haarajoki pp, 6 kk

Havaintopiste 0

○ 1-puol. kl	H	w	m (b = 0)	m	alkupai.	t0 (d)	pain. t (a)	tod. t
● 2-puol. kl	18	100	5.4...9.1	5	140	29	3.55	3.55
input					80			
	Sp	t50/E	rs	B	c _v	pain. 3.55	virh. mm	
Paraabeli	310	1200	58	0.086	4.8	687	ei havaint.	
Hyperbeli	320	1.15	56	0.089		663	ei havaint.	



Aika-Painumapotentiaali kuvaaja

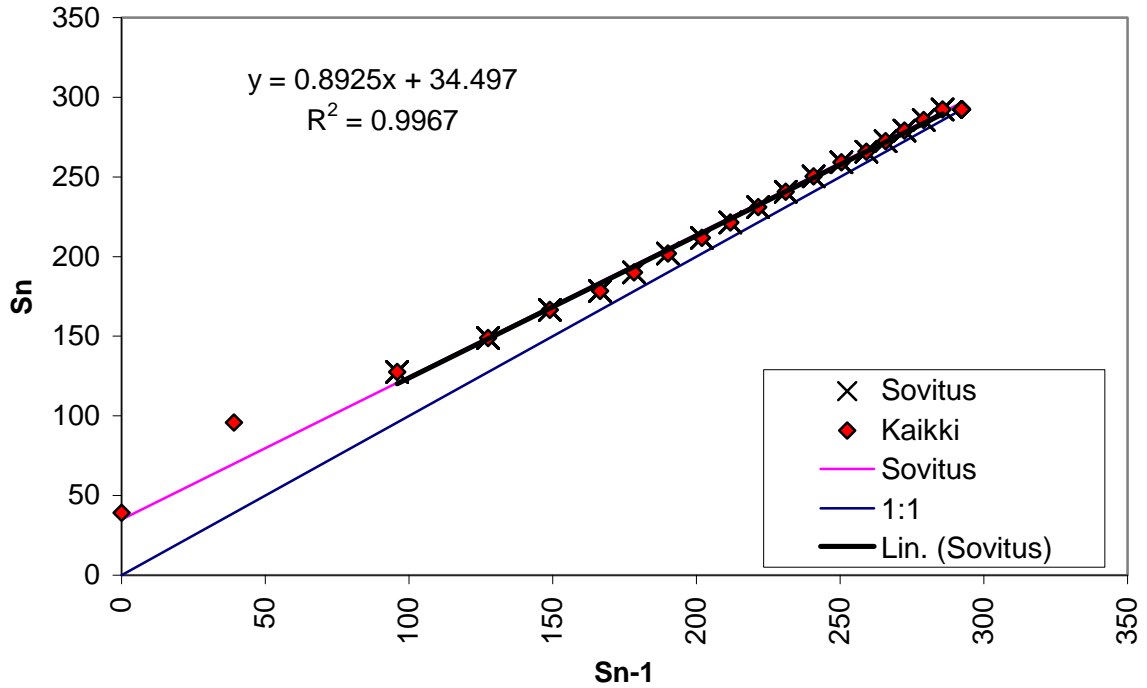


Aika-Painuma kuvaaja

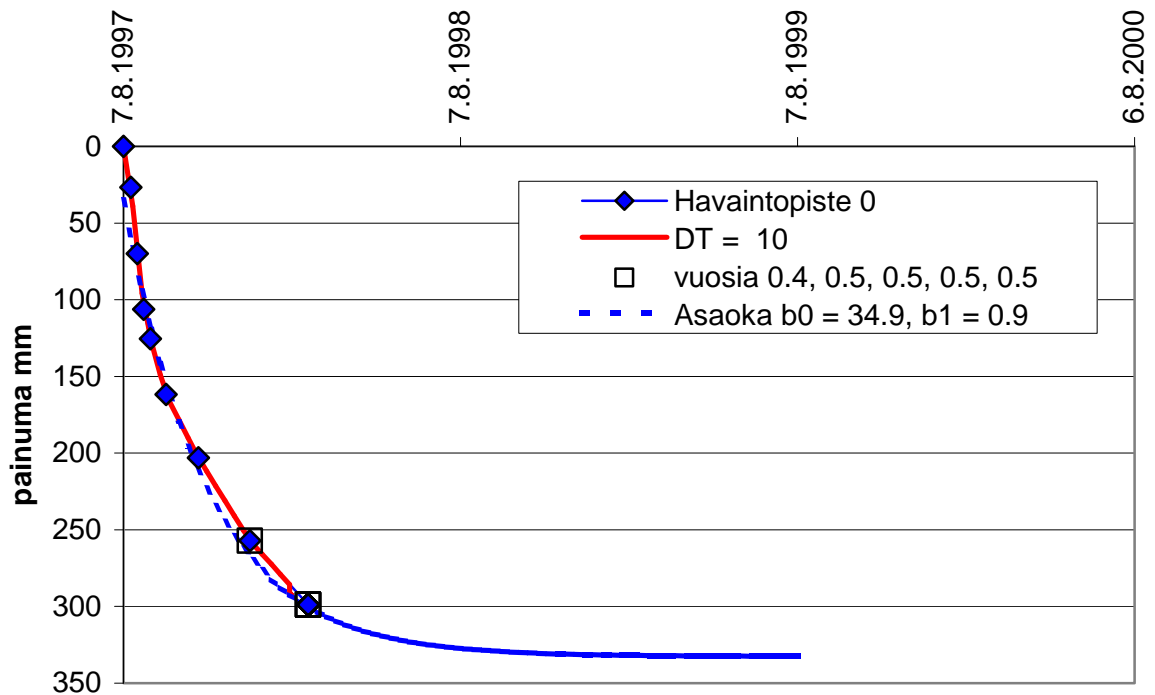


pain. t (a)	tod. t
3.55	3.6

input				output			
	β_0	β_1	t	Prim. Pain.		pain3.6	virh. mm
Asaoka	34.9	0.895	10.00	333		333	ei havaint.
	34.9	0.895	10.00				



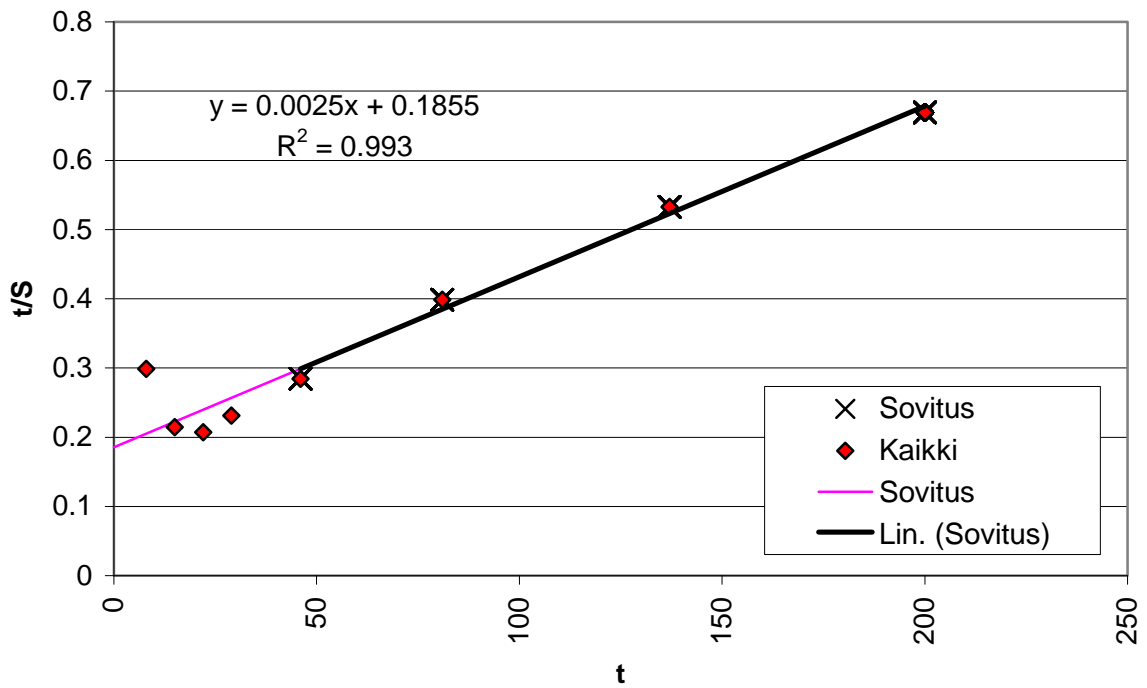
Aika-Painuma kuvaaja



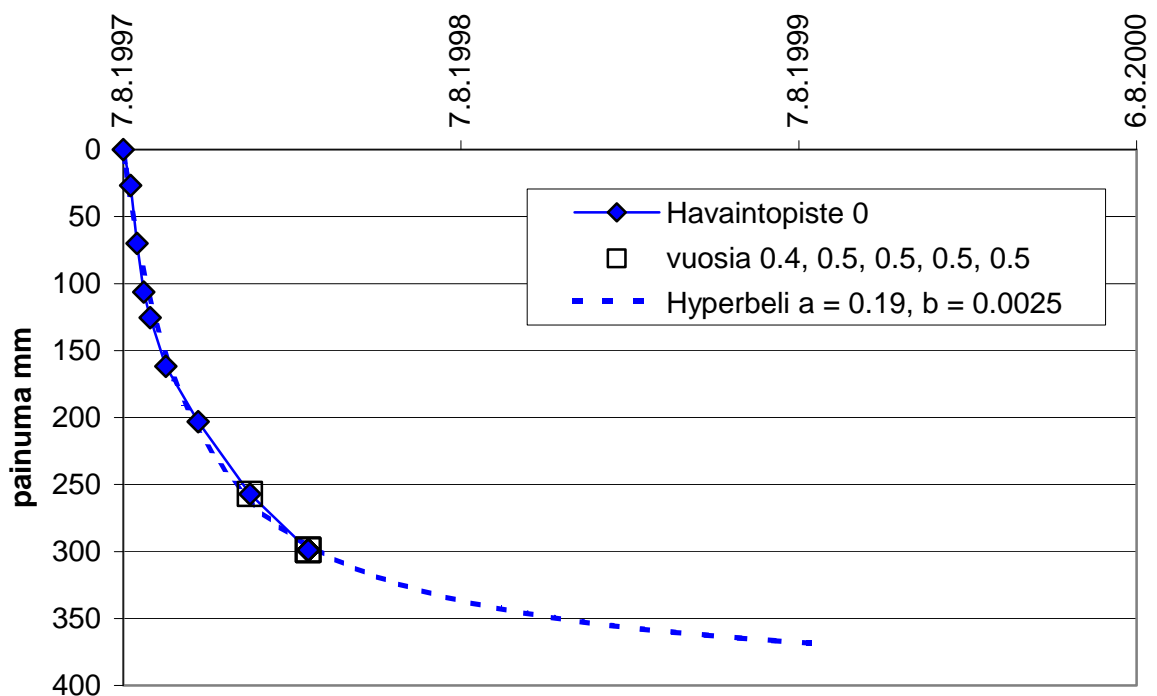


pain. t (a)	tod. t
3.55	3.55

input			output			
	a	b	Painuma		pain3.55	virh. mm
Hyperbeli	0.19	2.46E-03	406		384	ei havaint.



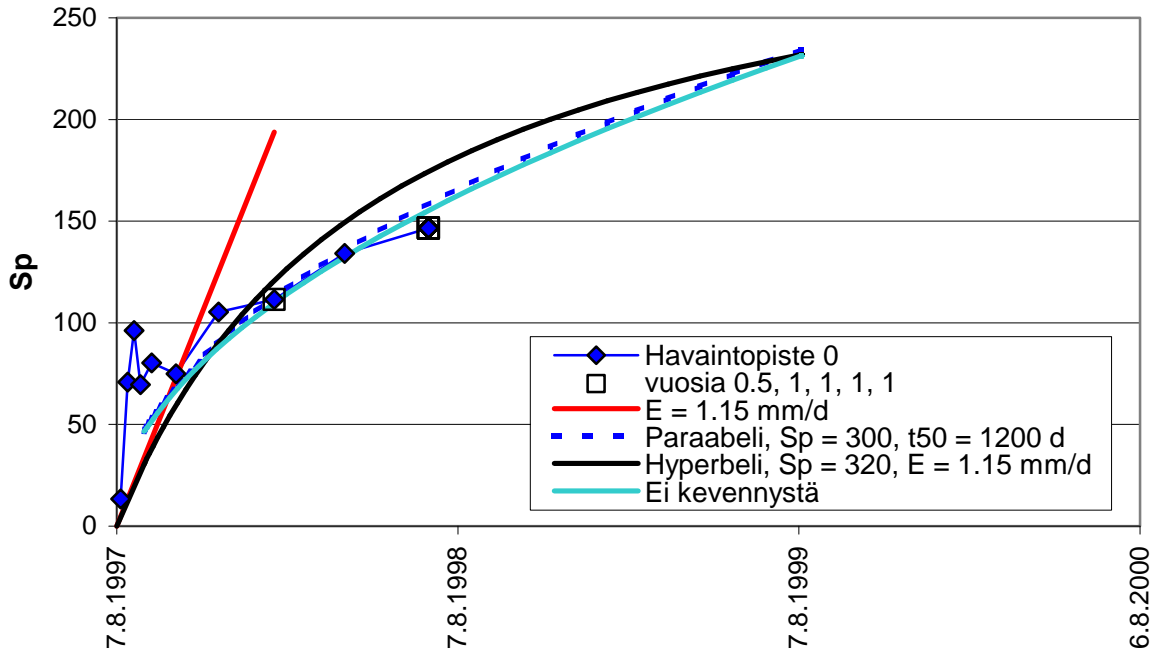
Aika-Painuma kuvaaja



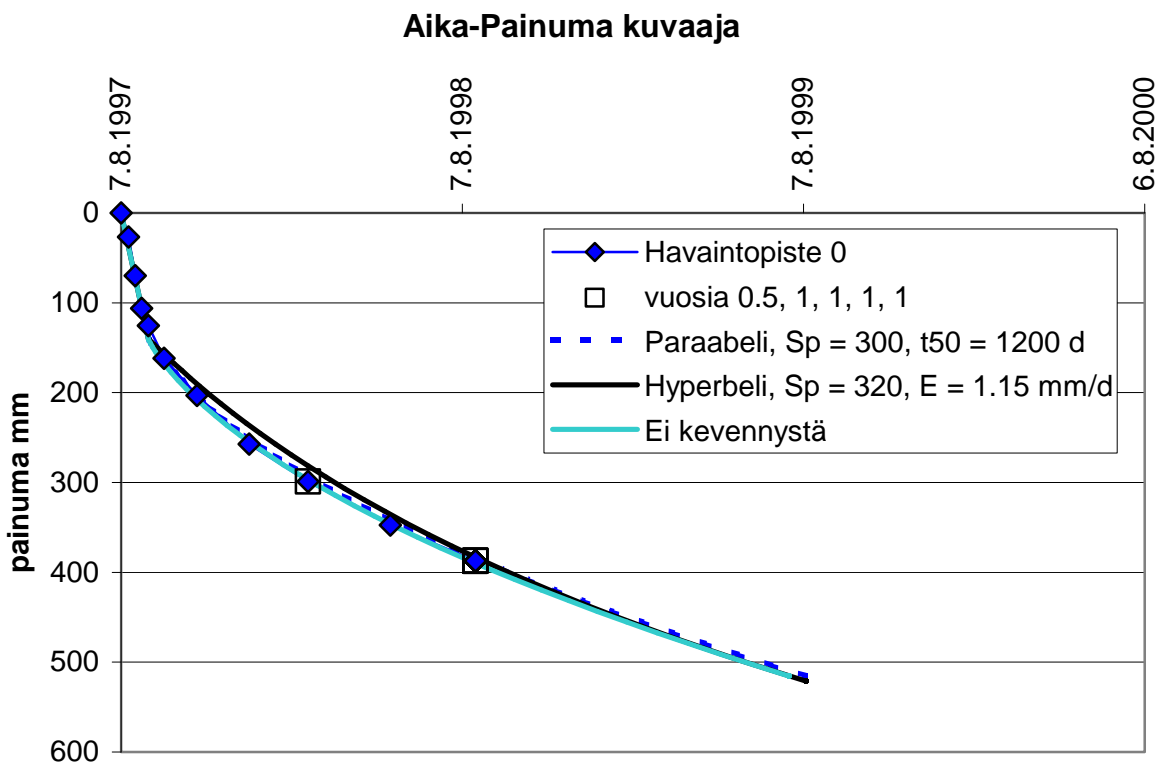
Koepenger, Haarajoki pp, 1 v

Havaintopiste 0

○ 1-puol. kl	H	w	m (b = 0)	m	alkupai.	t0 (d)	pain. t (a)	tod. t
● 2-puol. kl	18	100	5.4...9.1	5	140	29	3.55	3.55
input				80				
	Sp	t50/E	rs	B	c _v	pain. 3.55	virh. mm	
Paraabeli	300	1200	60	0.083	4.8	670	ei havaint.	
Hyperbeli	320	1.15	56	0.089		663	ei havaint.	



Aika-Painumapotentiaali kuvaaja

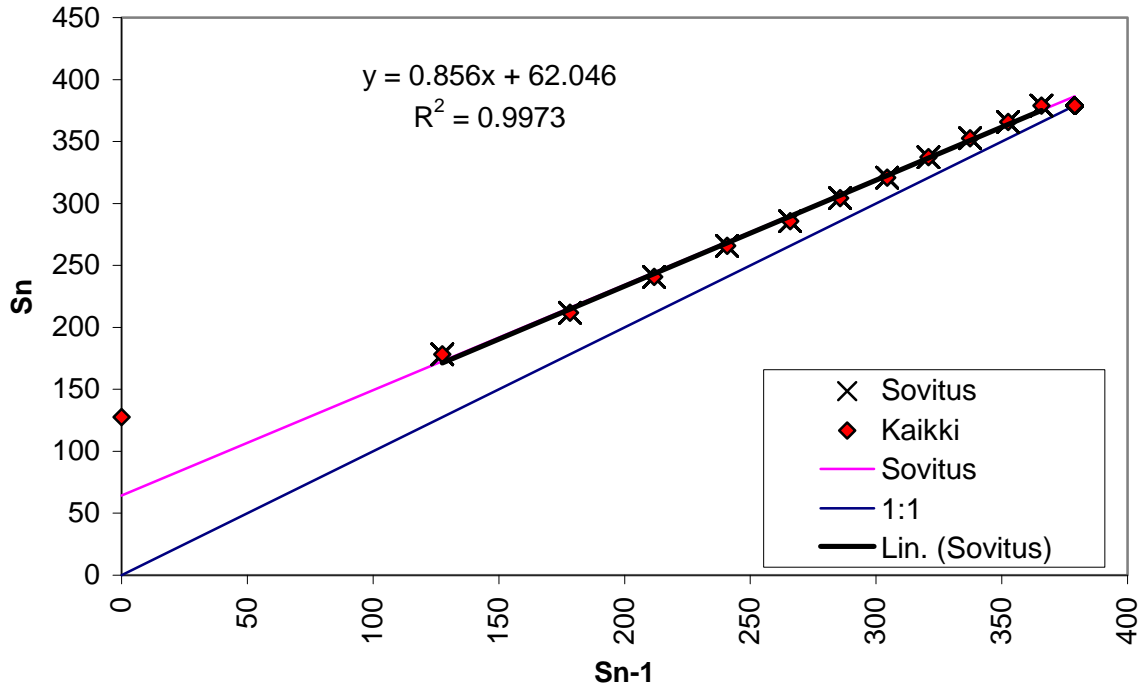


Aika-Painuma kuvaaja

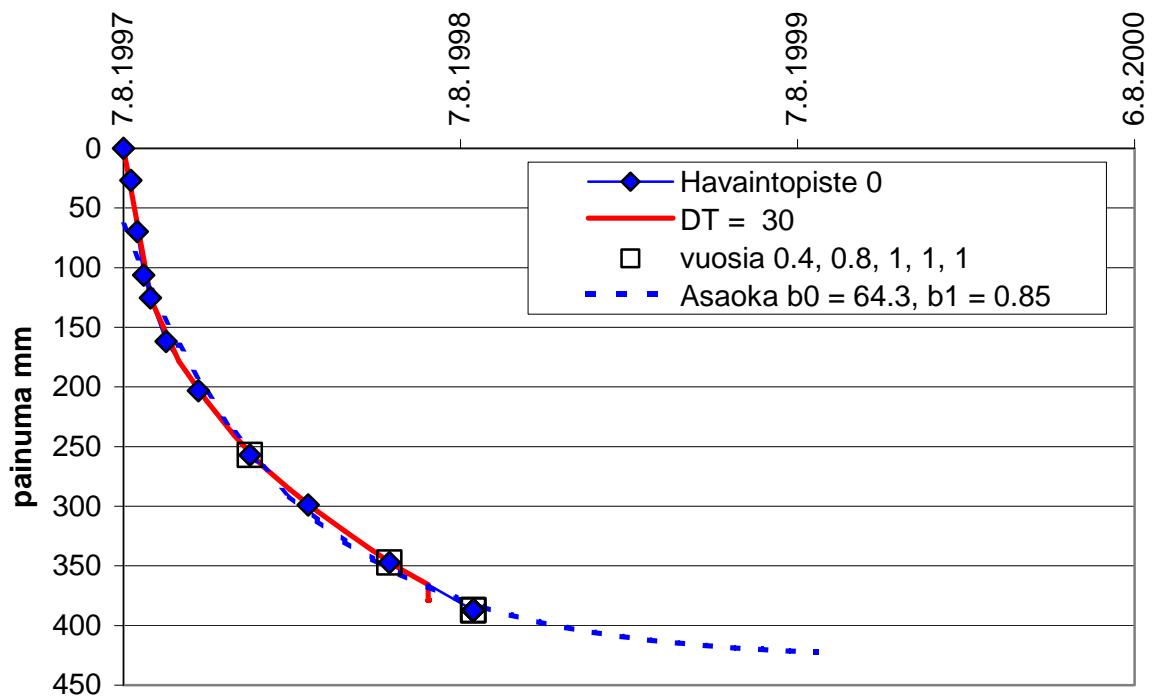


pain. t (a)	tod. t
3.55	3.5

input				output			
	β_0	β_1	t	Prim. Pain.		pain3.5	virh. mm
Asaoka	64.3	0.850	30.00	429		428	ei havaint.
	64.3	0.850	30.00				



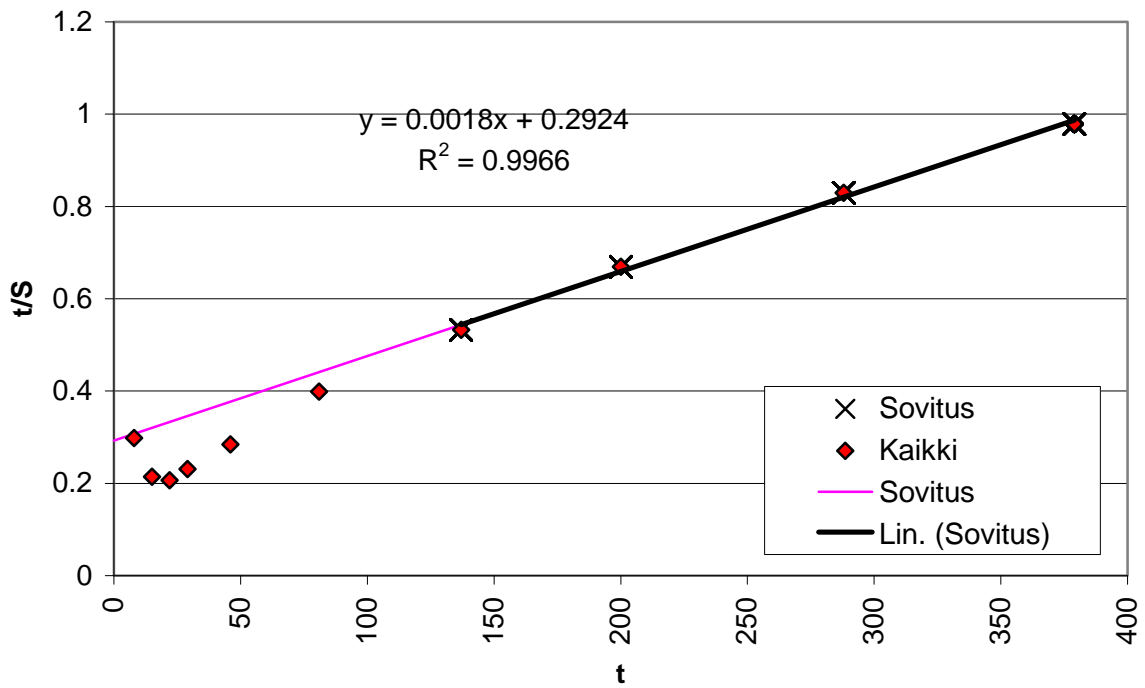
Aika-Painuma kuvaaja



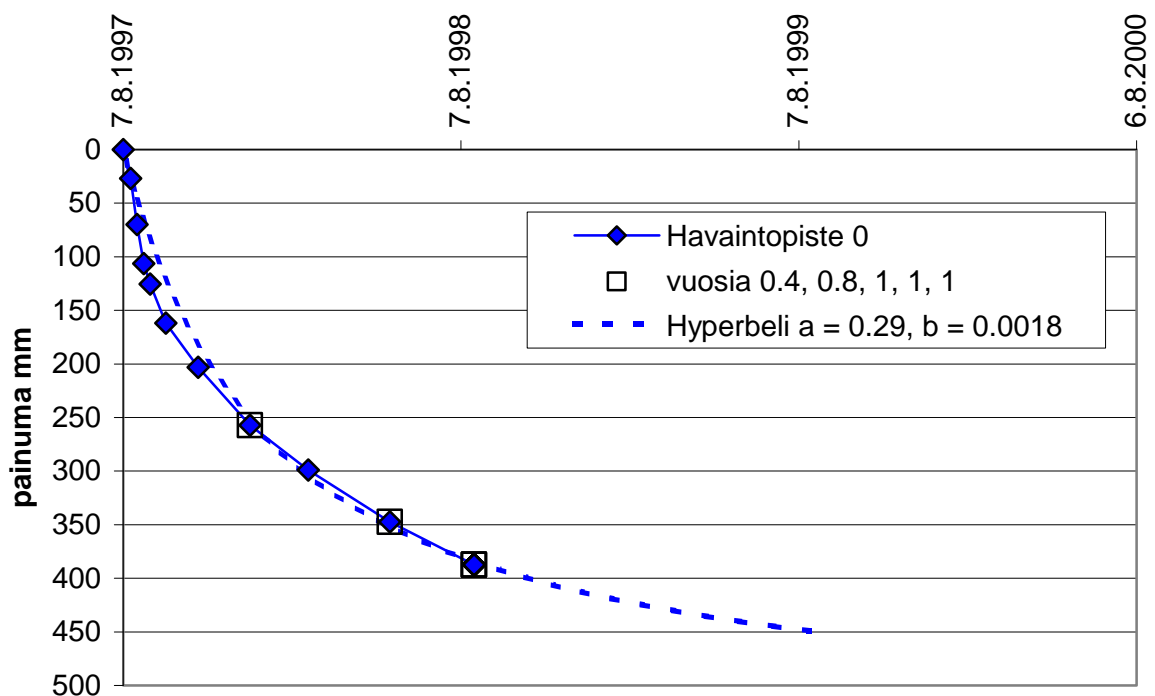


pain. t (a)	tod. t
3.55	3.55

input			output			
	a	b	Painuma		pain3.55	virh. mm
Hyperbeli	0.29	1.83E-03	546		486	ei havaint.



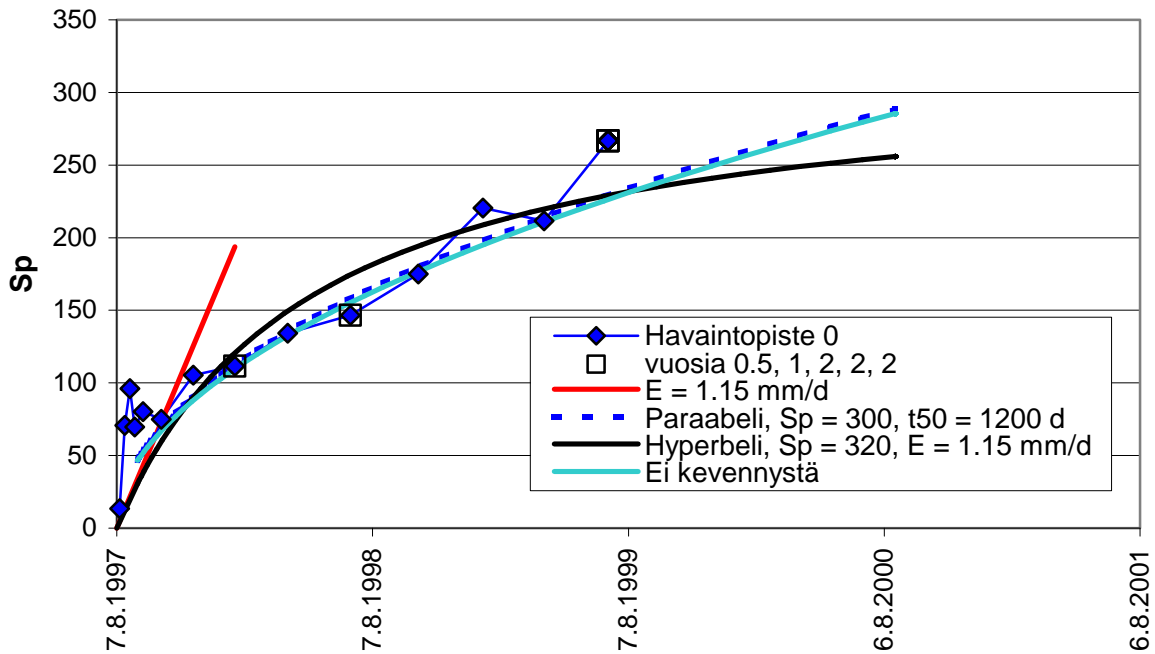
Aika-Painuma kuvaaja



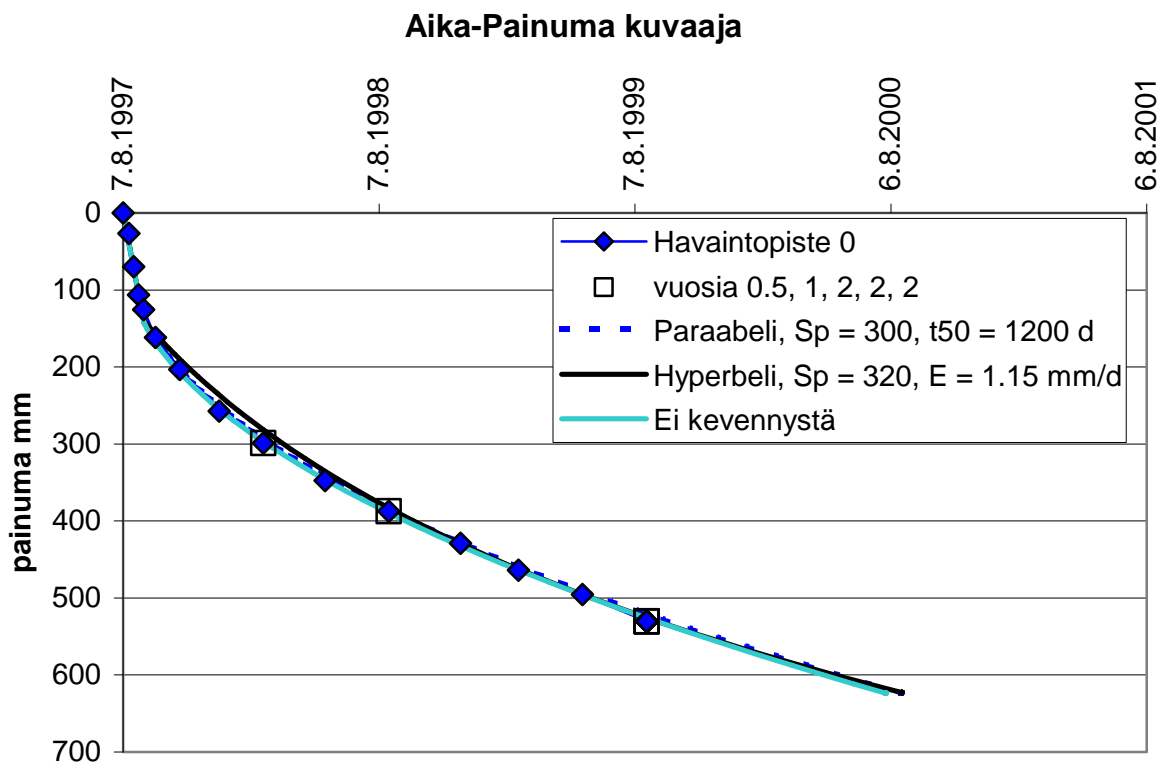
Koepenger, Haarajoki pp, 2 v

Havaintopiste 0

○ 1-puol. kl	H	w	m (b = 0)	m	alkupai.	t0 (d)	pain. t (a)	tod. t
● 2-puol. kl	18	100	5.4...9.1	5	140	29	3.55	3.55
input				80				
	Sp	t50/E	rs	B	c _v	pain. 3.55	virh. mm	
Paraabeli	300	1200	60	0.083	4.8	670	ei havaint.	
Hyperbeli	320	1.15	56	0.089		663	ei havaint.	



Aika-Painumapotentialiaali kuvaaja

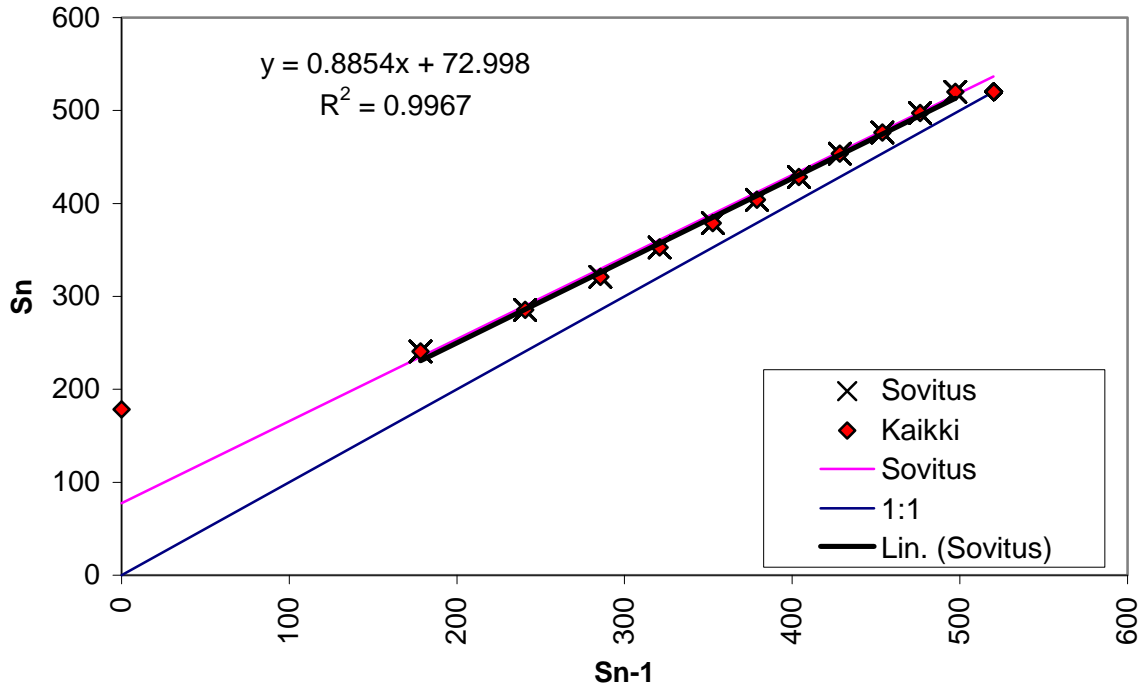


Aika-Painuma kuvaaja

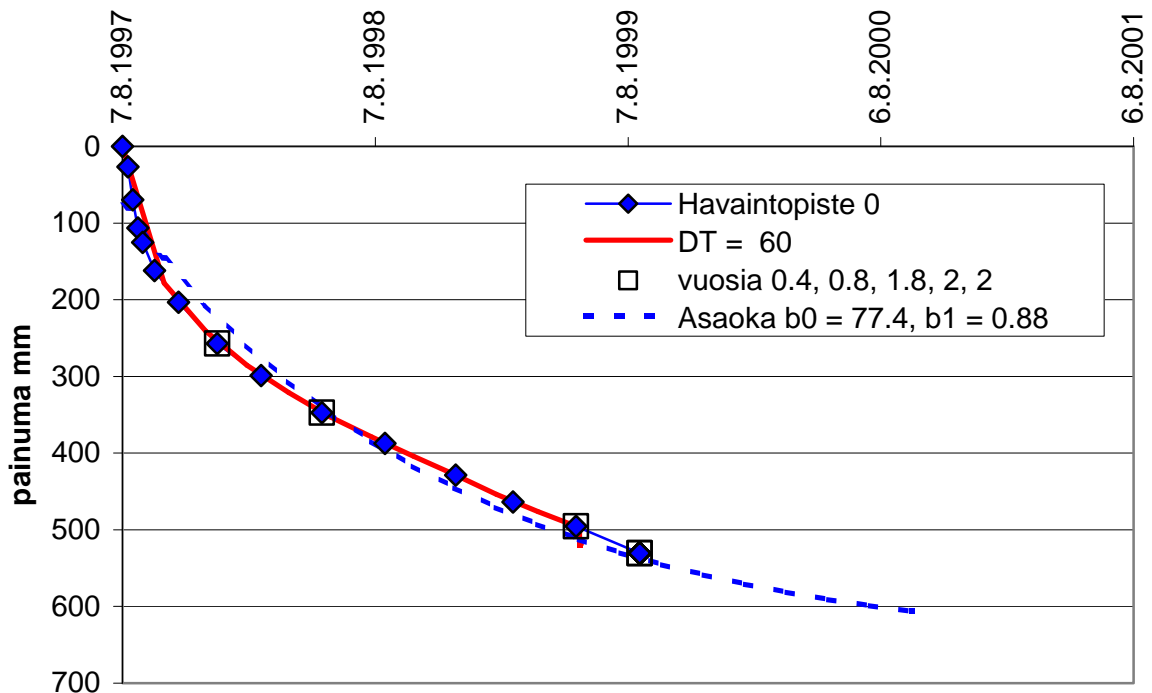


pain. t (a)	tod. t
3.55	3.6

input				output			
	β_0	β_1	t	Prim. Pain.		pain3.6	virh. mm
Asaoka	77.4	0.883	60.00	661		624	ei havaint.
	77.4	0.883	60.00				



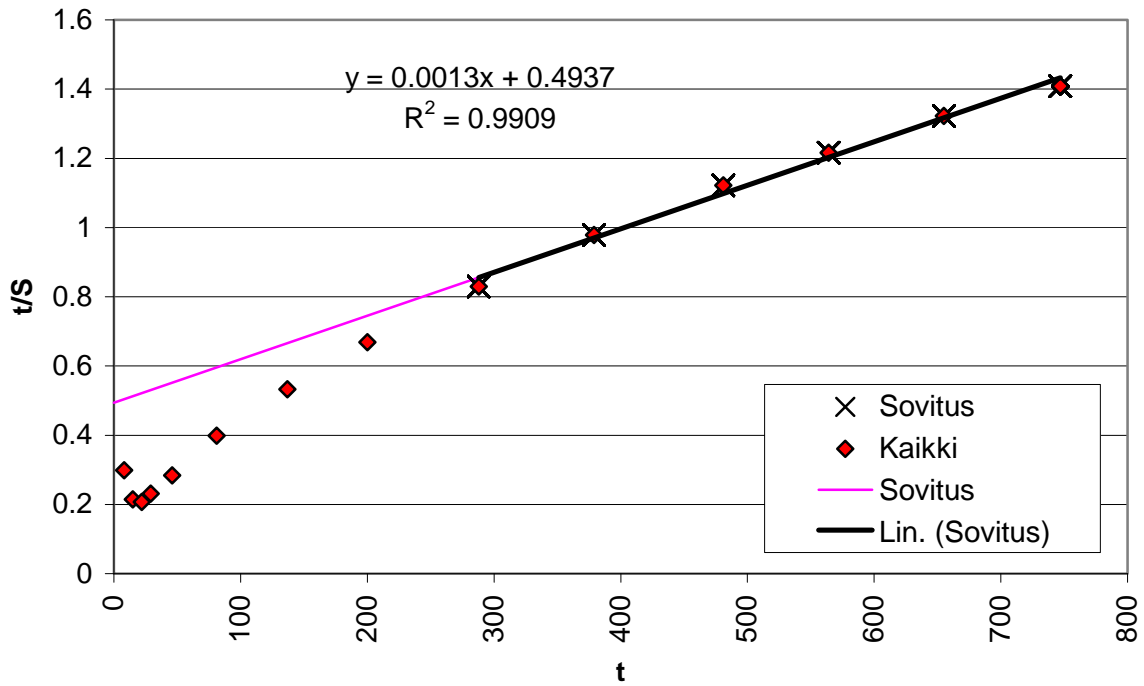
Aika-Painuma kuvaaja



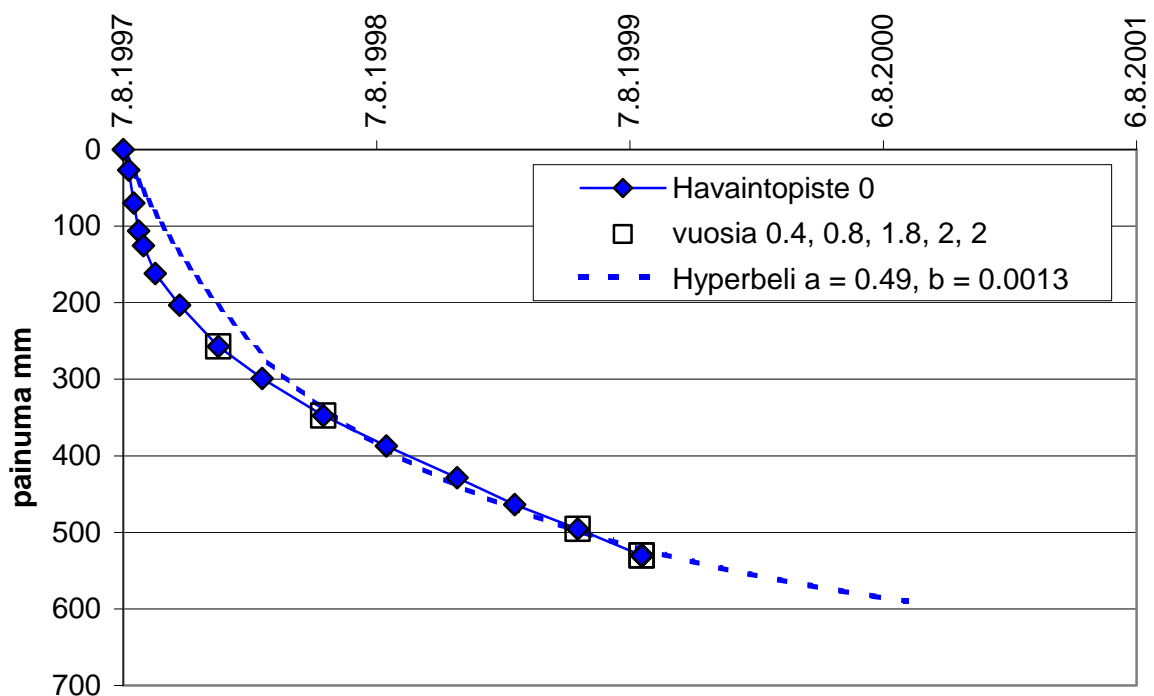


pain. t (a)	tod. t
3.55	3.55

input			output			
	a	b	Painuma		pain3.55	virh. mm
Hyperbeli	0.49	1.26E-03	796		611	ei havaint.



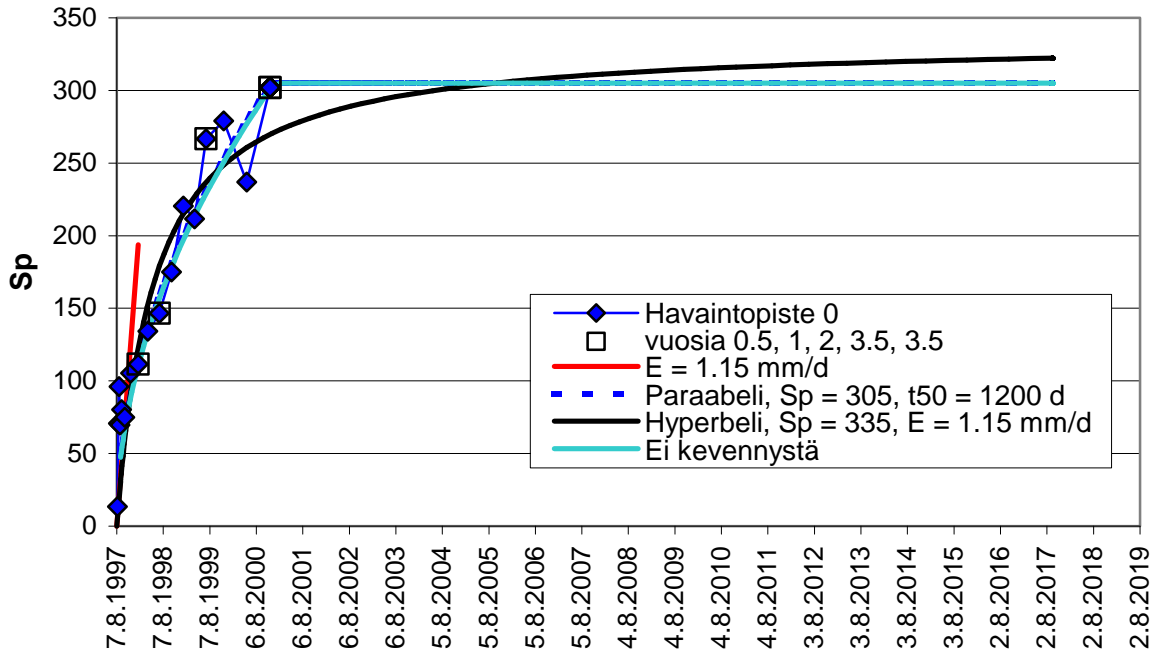
Aika-Painuma kuvaaja



Koepenger, Haarajoki pp, 3,5 v

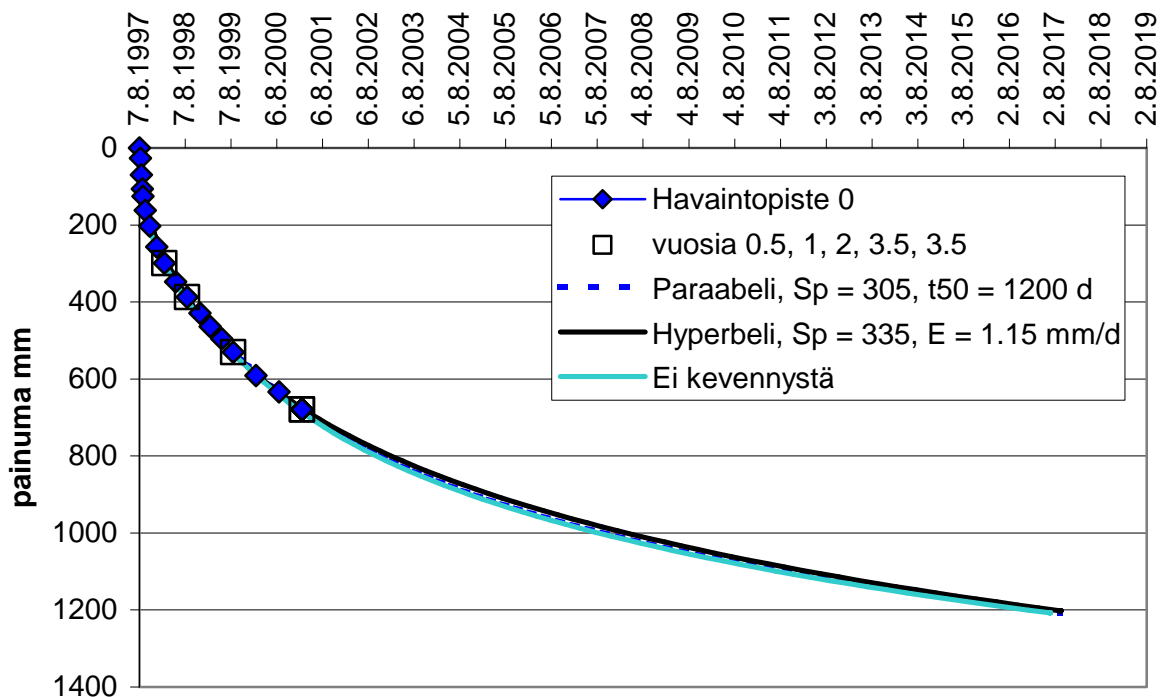
Havaintopiste 0

○ 1-puol. kl	H	w	m (b = 0)	m	alkupai.	t0 (d)	pain. t (a)	tod. t
● 2-puol. kl	18	100	5.4...9.1	5	140	29	20	20
input				80				
	Sp	t50/E	rs	B	c _v	pain. 20	virh. mm	
Paraabeli	305	1200	59	0.085	4.8	1206	ei havaint.	
Hyperbeli	335	1.15	54	0.093		1200	ei havaint.	



Aika-Painumapotentiaali kuvaaja

Aika-Painuma kuvaaja





pain. t (a)

tod. t

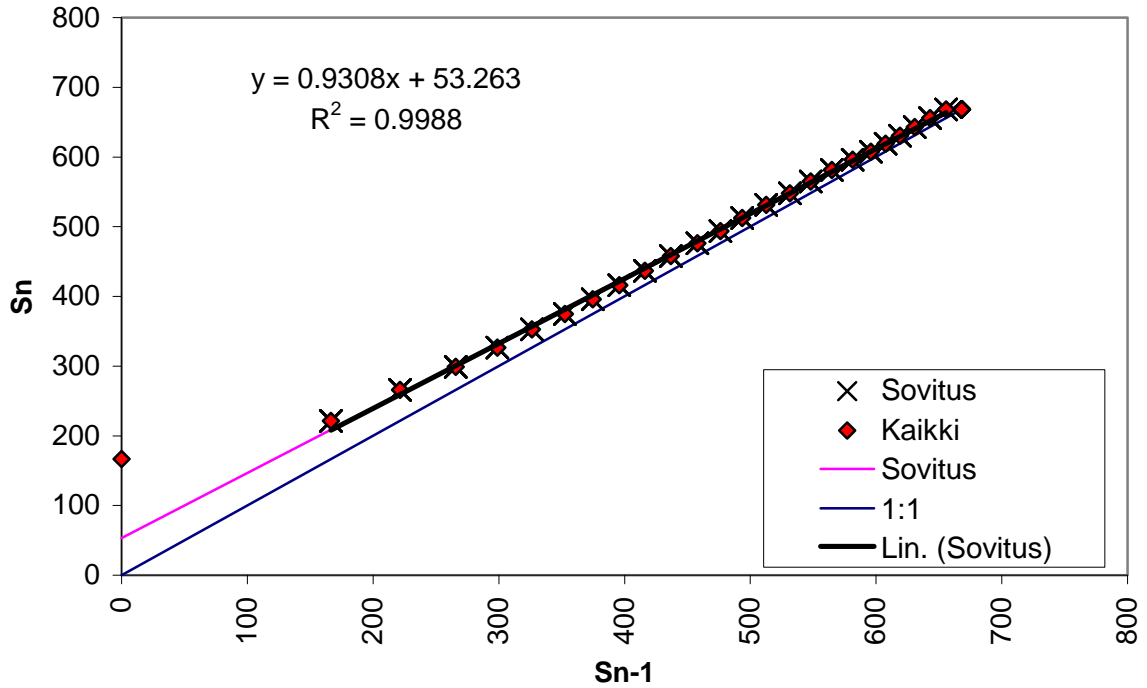
20

20

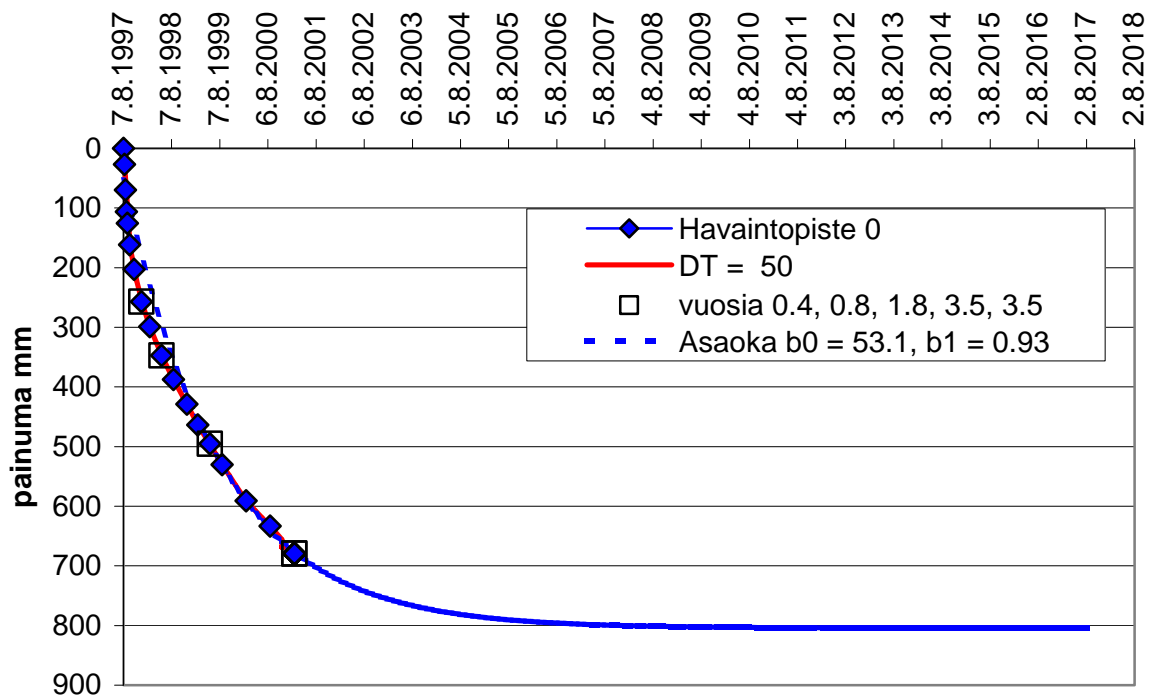
input

output

	β_0	β_1	t	Prim. Pain.	pain20	virh. mm
Asaoka	53.1	0.934	50.00	804	804	ei havaint.
	53.1	0.934	50.00			



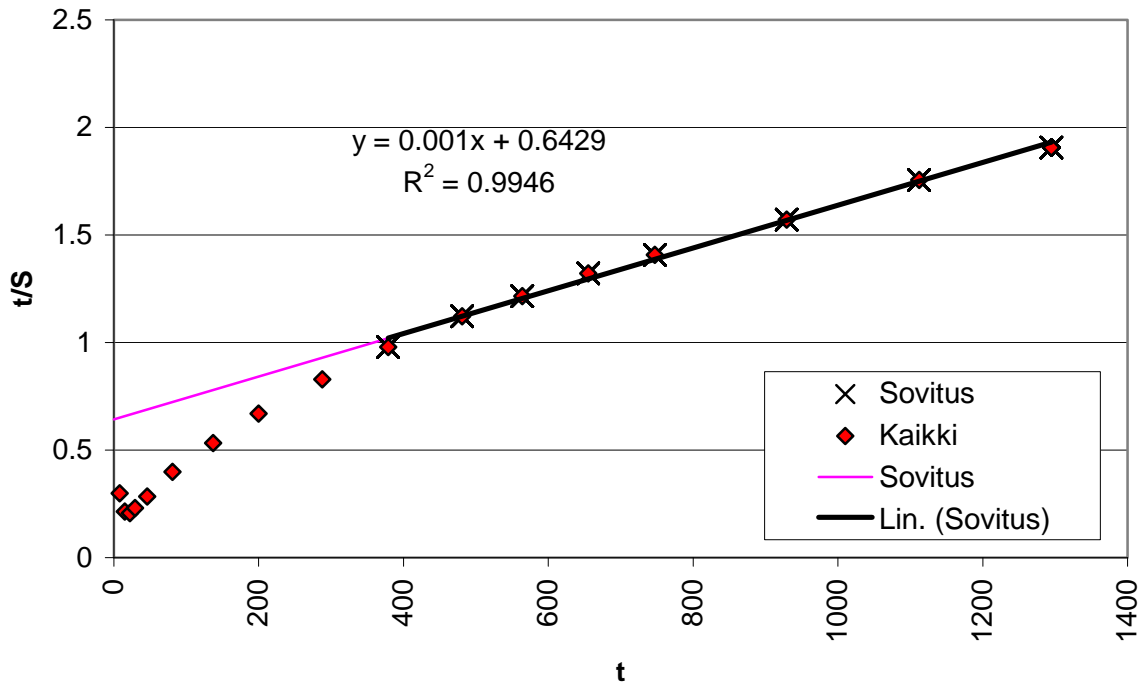
Aika-Painuma kuvaaja



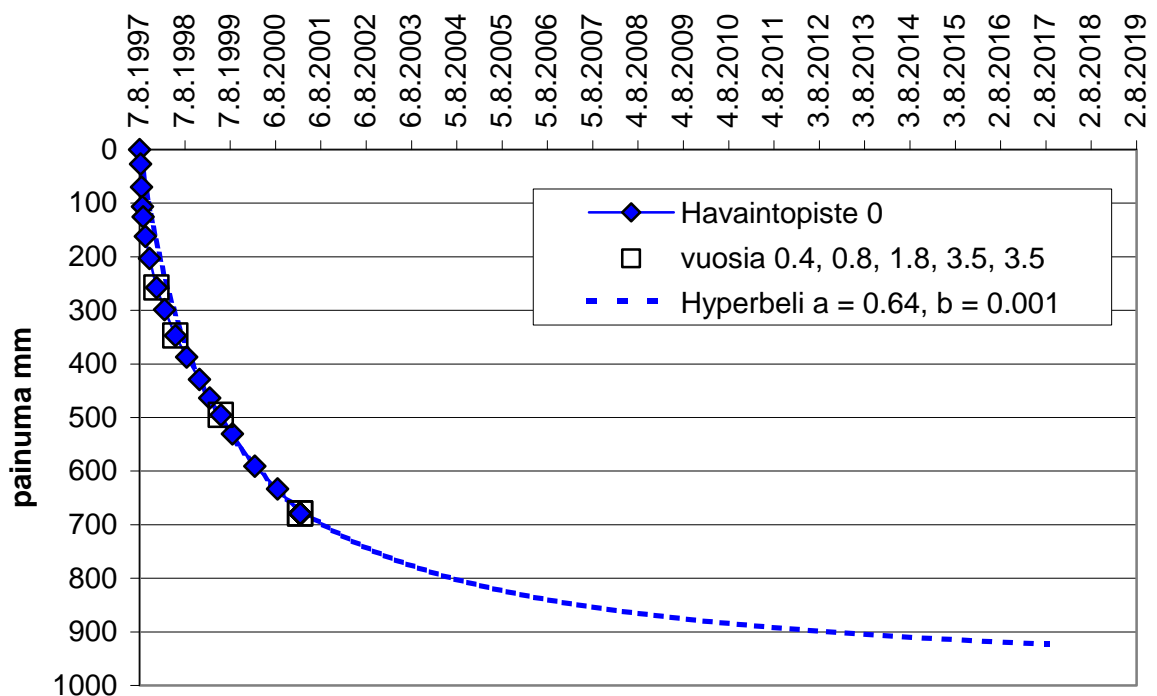


pain. t (a)	tod. t
20	20

input			output			
	a	b	Painuma		pain20	virh. mm
Hyperbeli	0.64	9.96E-04	1004		923	ei havaint.



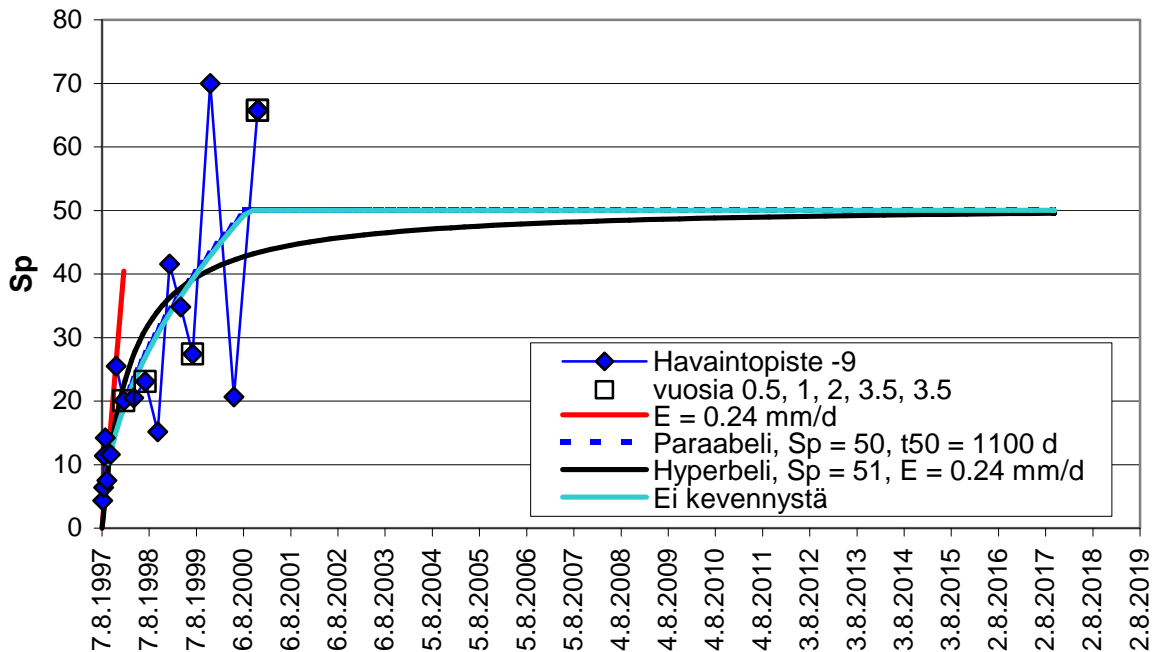
Aika-Painuma kuvaaja



Koepenger, Haarajoki mp, 3,5 v

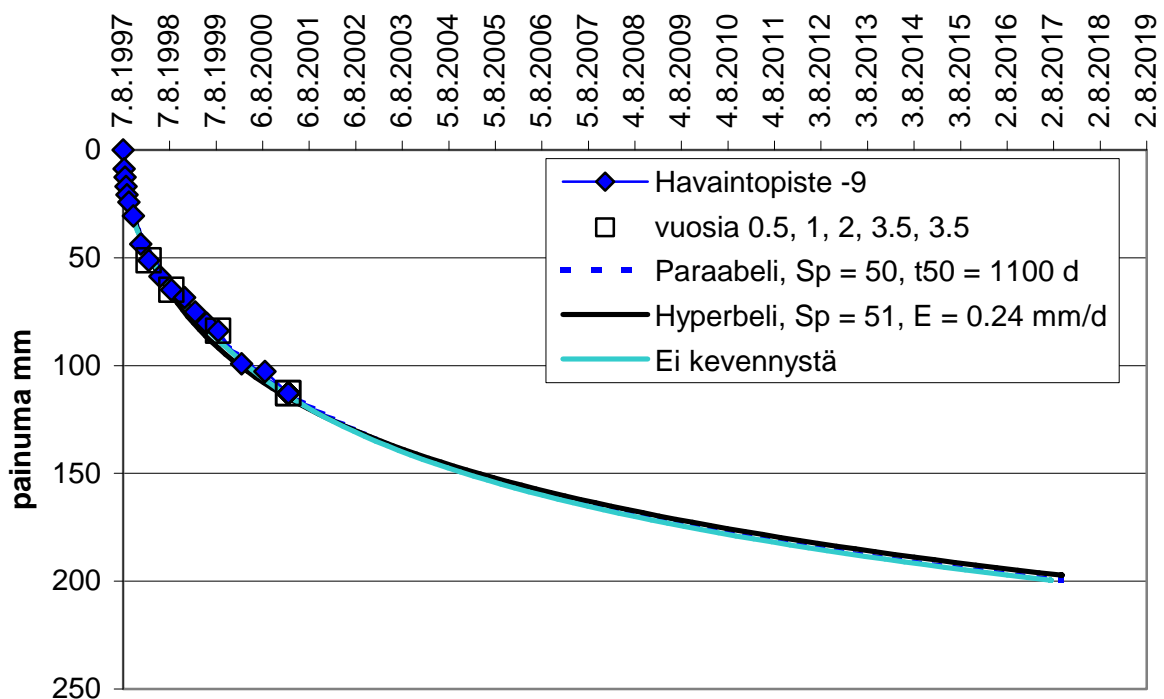
Havaintopiste -9

○ 1-puol. kl	H	w	m (b = 0)	m	alkupai.	t0 (d)	pain. t (a)	tod. t
● 2-puol. kl	19	100	5.4...9.1	5	25	46	20	20
input				80				
	Sp	t50/E	rs	B	c _v	pain. 20	virh. mm	
Paraabeli	50	1100	380	0.013	5.9	199	ei havaint.	
Hyperbeli	51	0.24	373	0.013		197	ei havaint.	

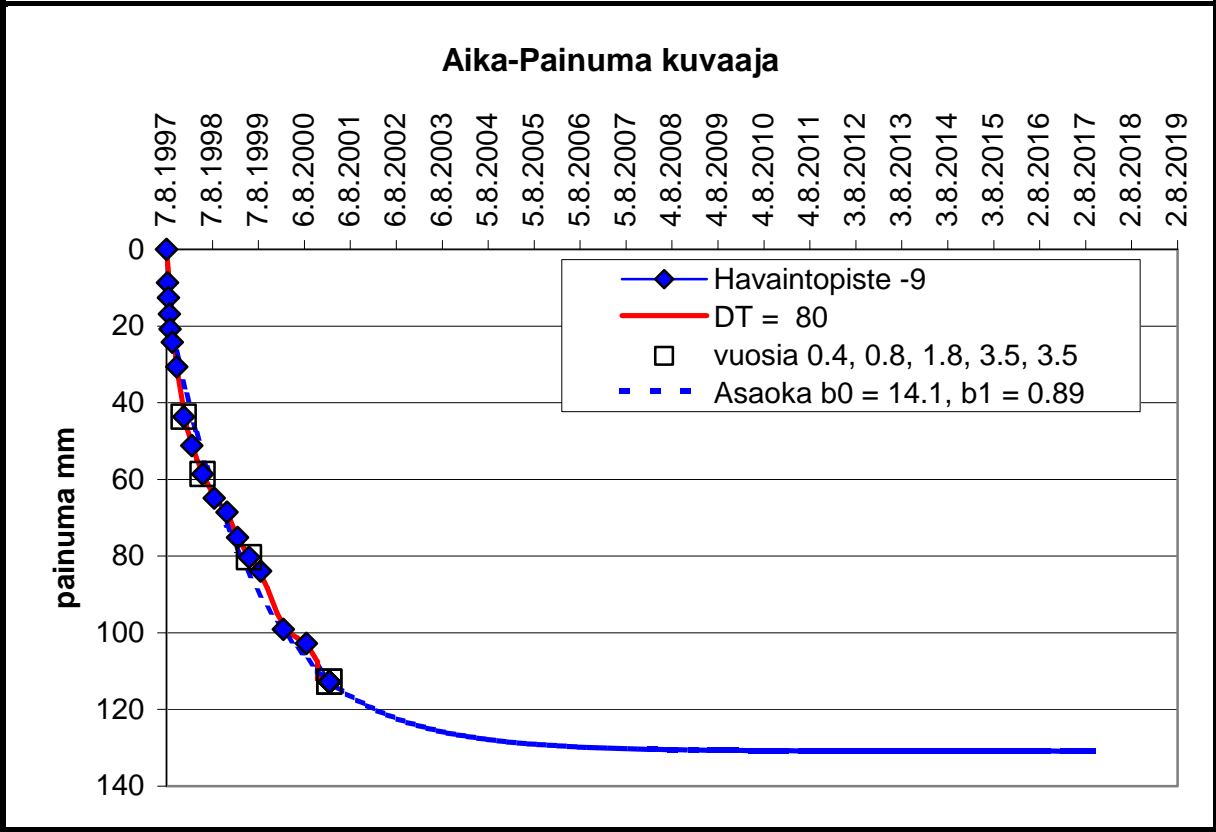
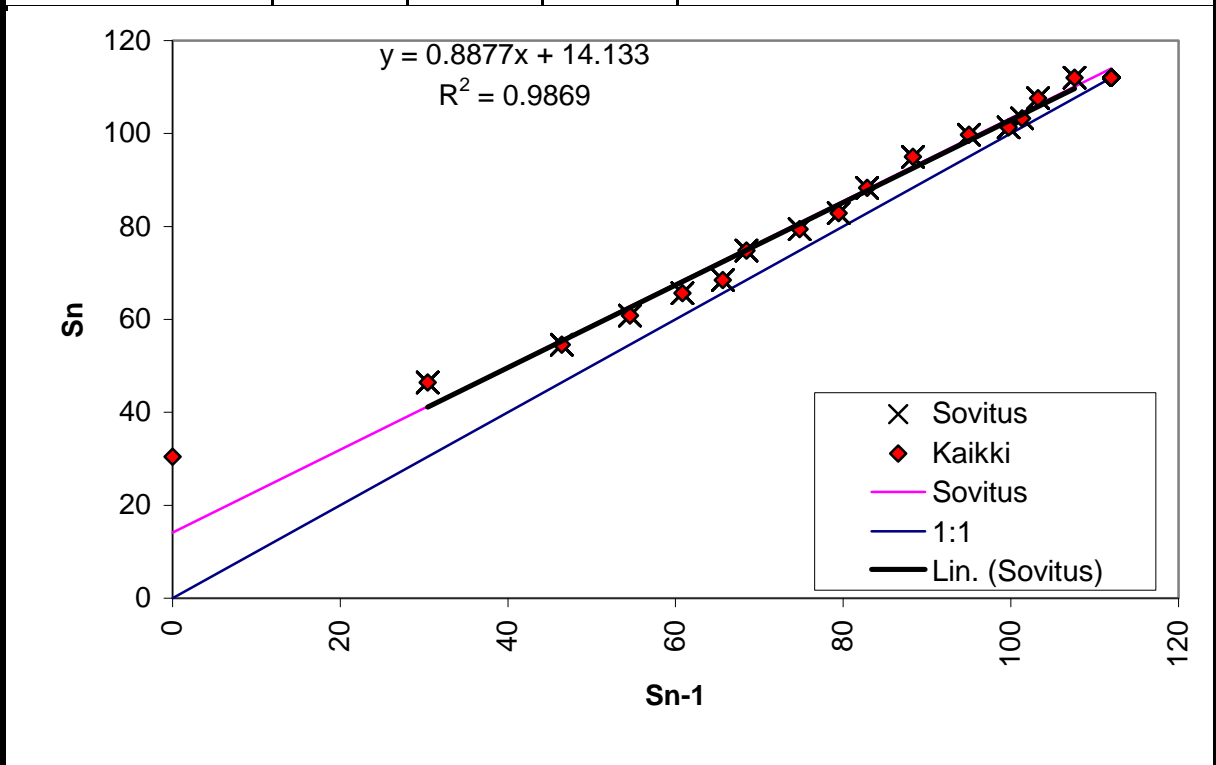


Aika-Painumapotentiaali kuvaaja

Aika-Painuma kuvaaja

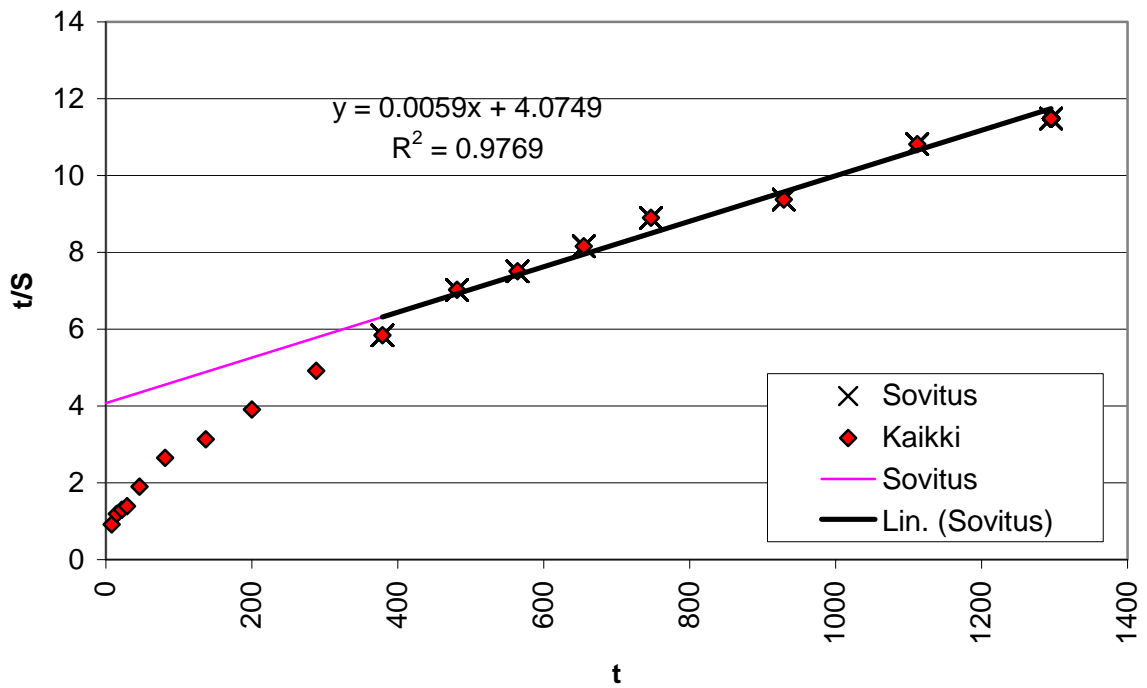


				pain. t (a)	tod. t
				20	19.9
input			output		
	β_0	β_1	t	Prim. Pain.	pain19.9
Asaoka	14.1	0.892	80.00	131	131
	14.1	0.892	80.00		ei havaint.

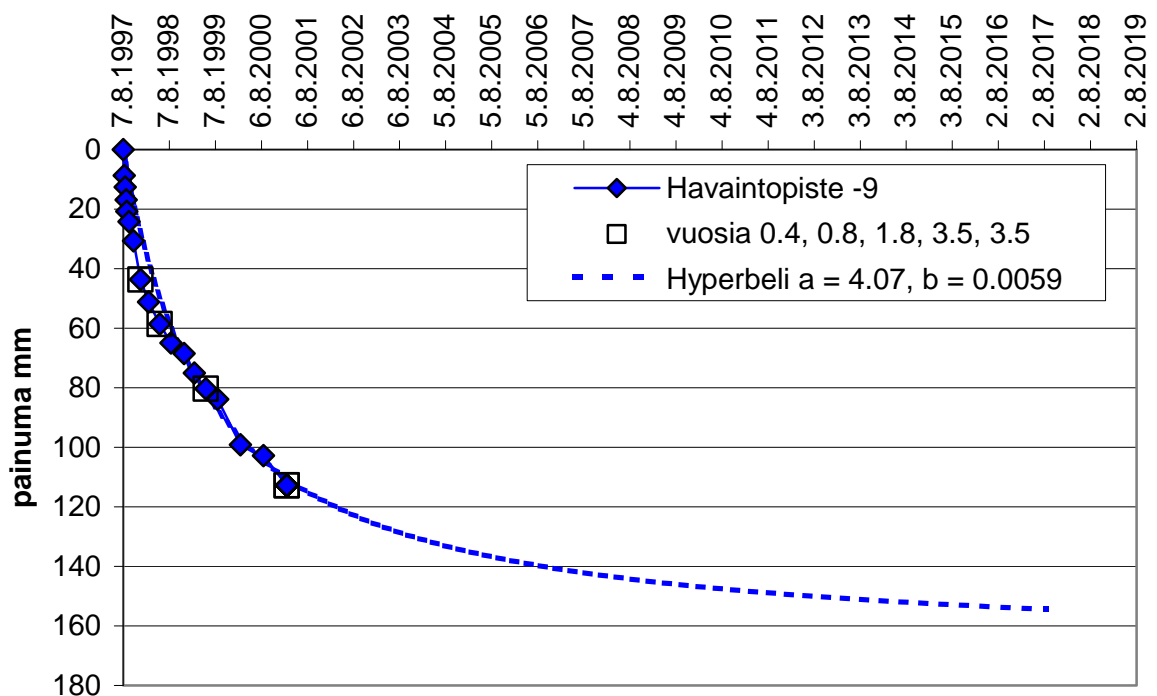




				pain. t (a)	tod. t
				20	20
input			output		
	a	b	Painuma		virh. mm
Hyperbeli	4.07	5.92E-03	169	154	ei havaint.



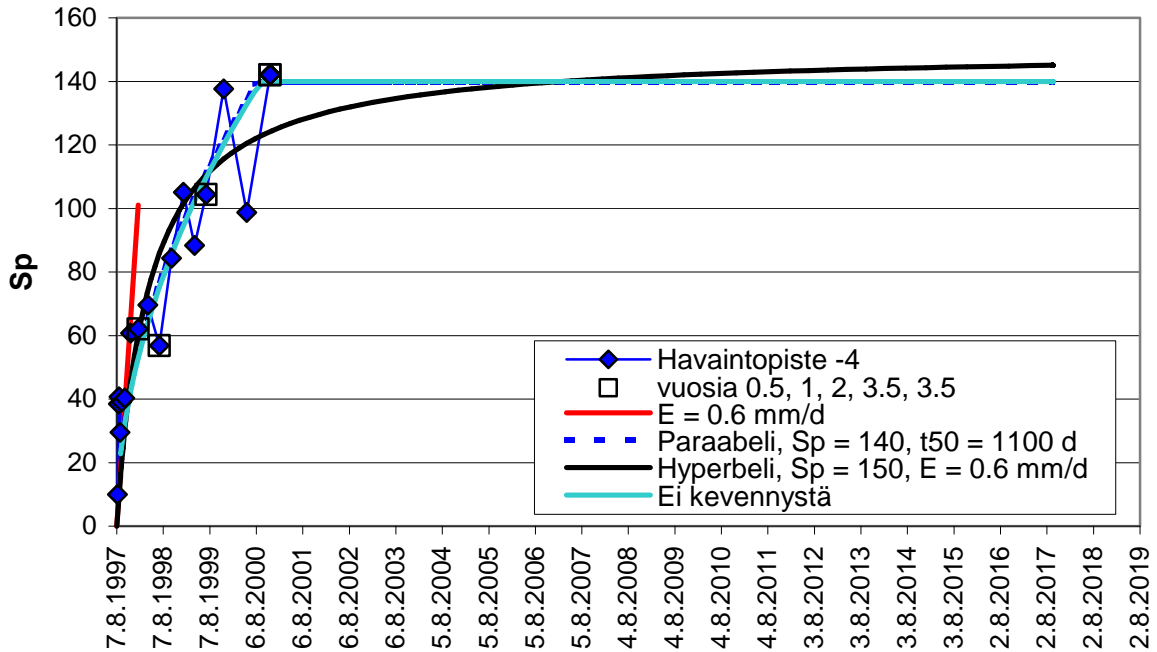
Aika-Painuma kuvaaja



Koepenger, Haarajoki mp, 3,5 v

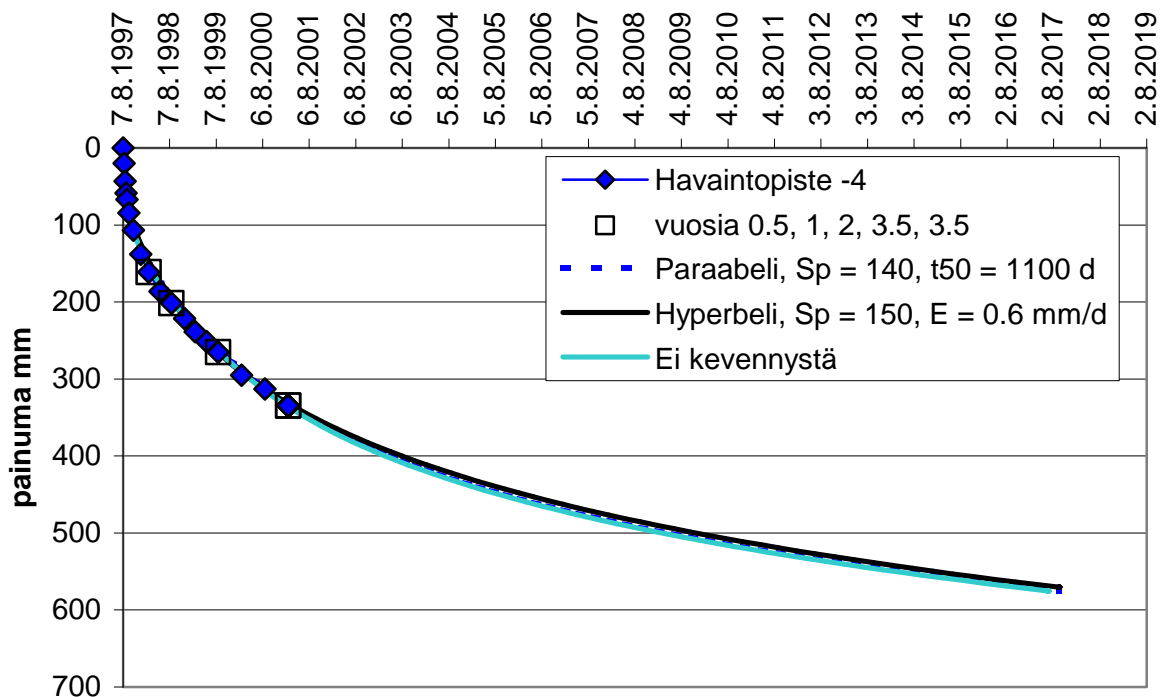
Havaintopiste -4

○ 1-puol. kl	H	w	m (b = 0)	m	alkupai.	t0 (d)	pain. t (a)	tod. t
● 2-puol. kl	19	100	5.4...9.1	5	75	29	20	20
input				80				
	Sp	t50/E	rs	B	c _v	pain. 20	virh. mm	
Paraabeli	140	1100	136	0.037	5.9	574	ei havaint.	
Hyperbeli	150	0.60	127	0.039		570	ei havaint.	

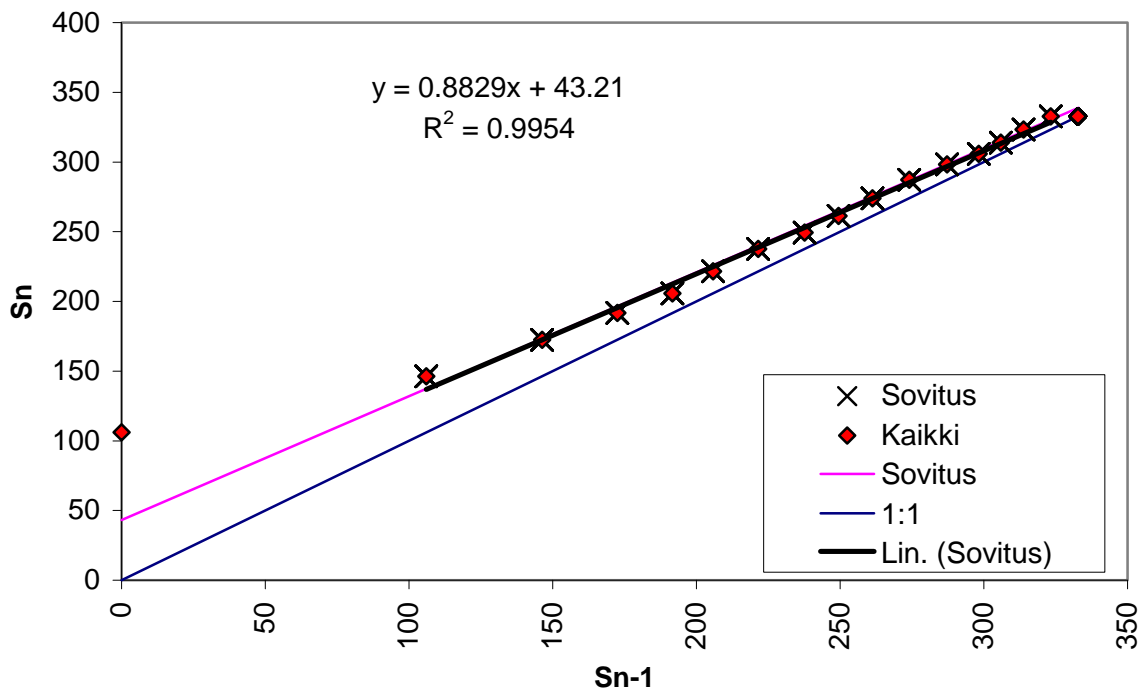


Aika-Painumapotentiaali kuvaaja

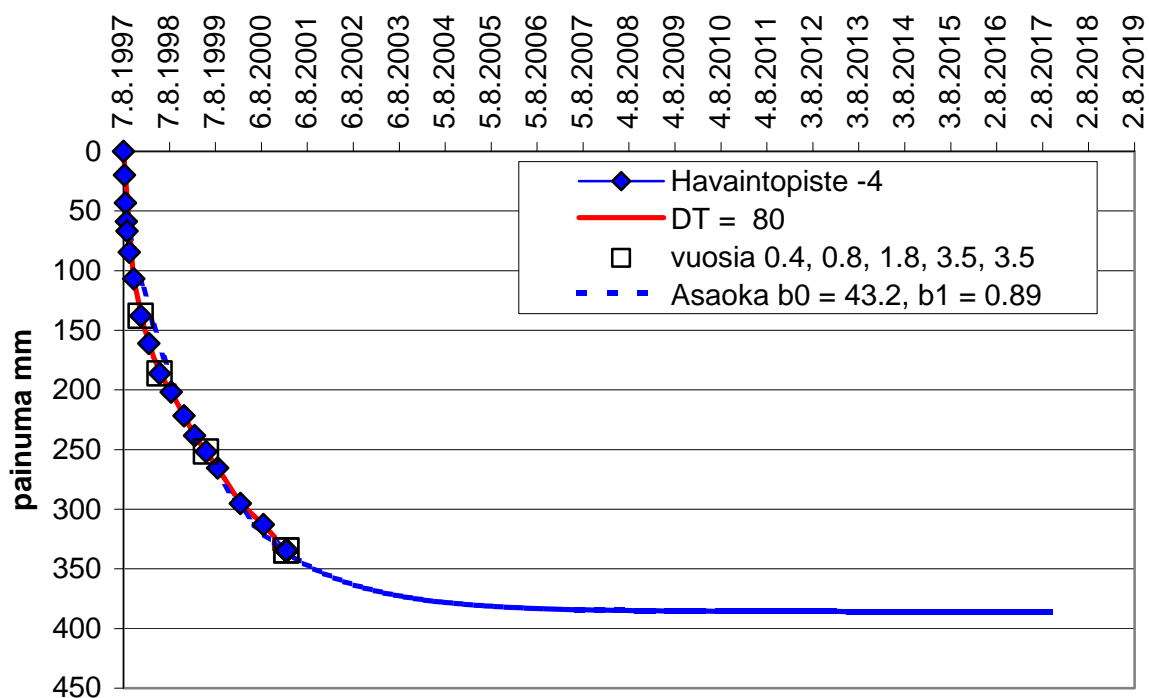
Aika-Painuma kuvaaja



Painumaennuste		Asaoka		LIITE III / s. 29		
Koepenger,Haarajoki mp, 3,5 v				Havaintopiste -4		
				pain. t (a)	tod. t	
				20	19.9	
input			output			
	β_0	β_1	t	Prim. Pain.	pain19.9	virh. mm
Asaoka	43.2	0.888	80.00	386	386	ei havaint.
	43.2	0.888	80.00			

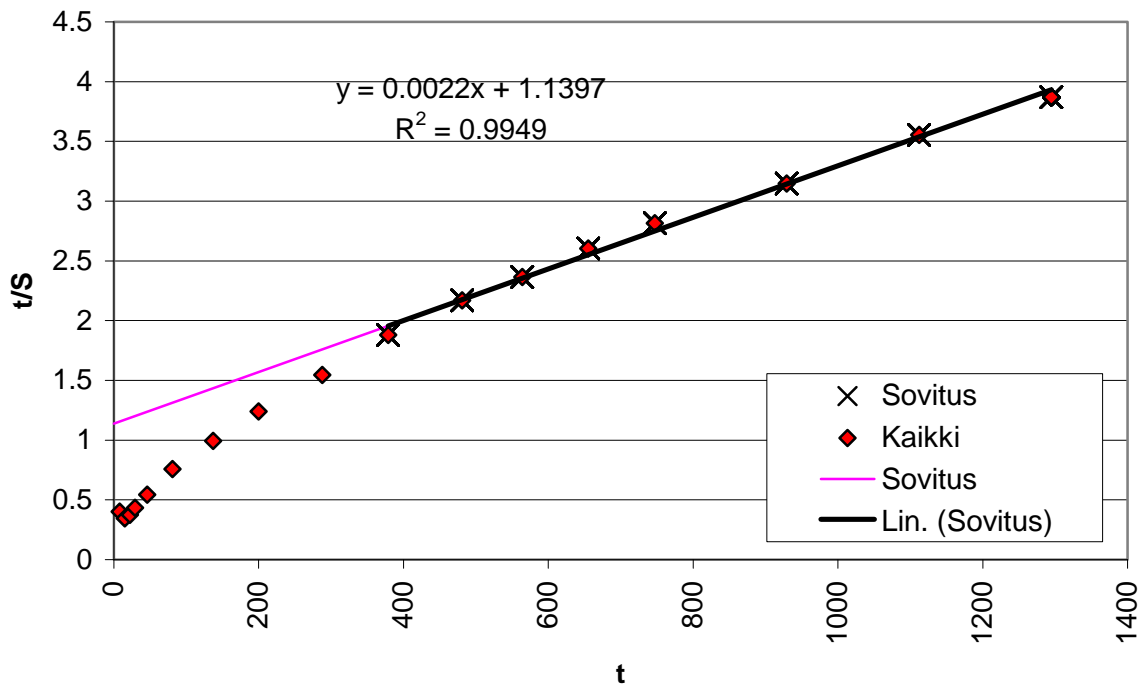


Aika-Painuma kuvaaja

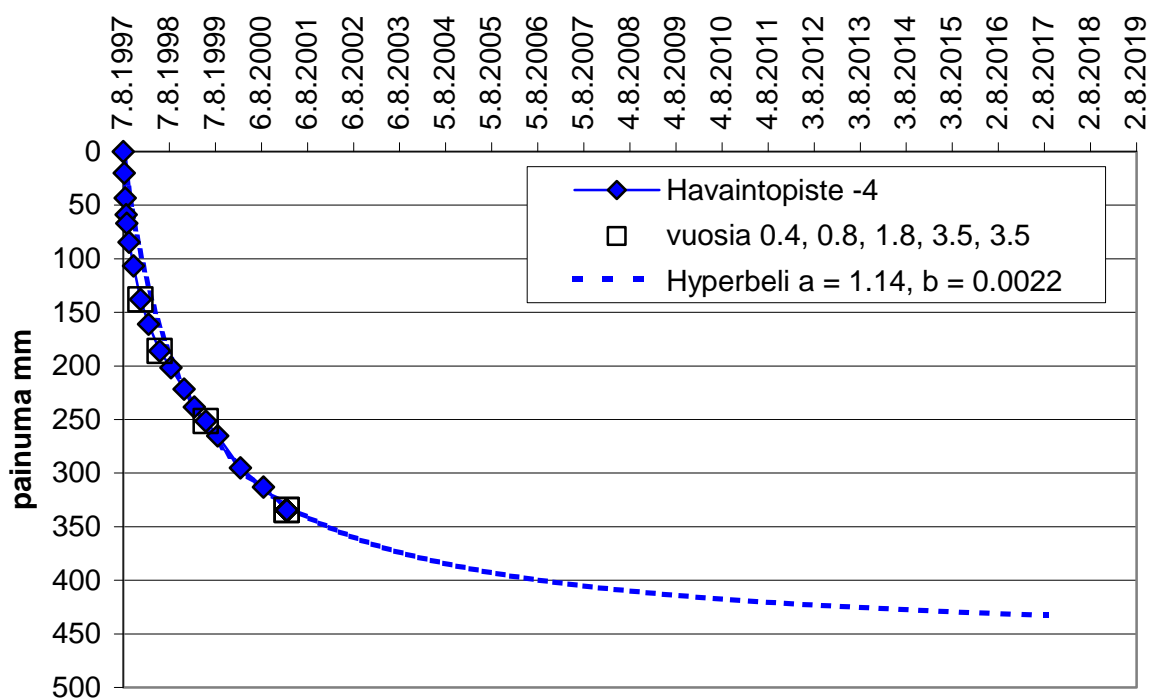




				pain. t (a)	tod. t
				20	20
input			output		
	a	b	Painuma		virh. mm
Hyperbeli	1.14	2.16E-03	464		ei havaint.



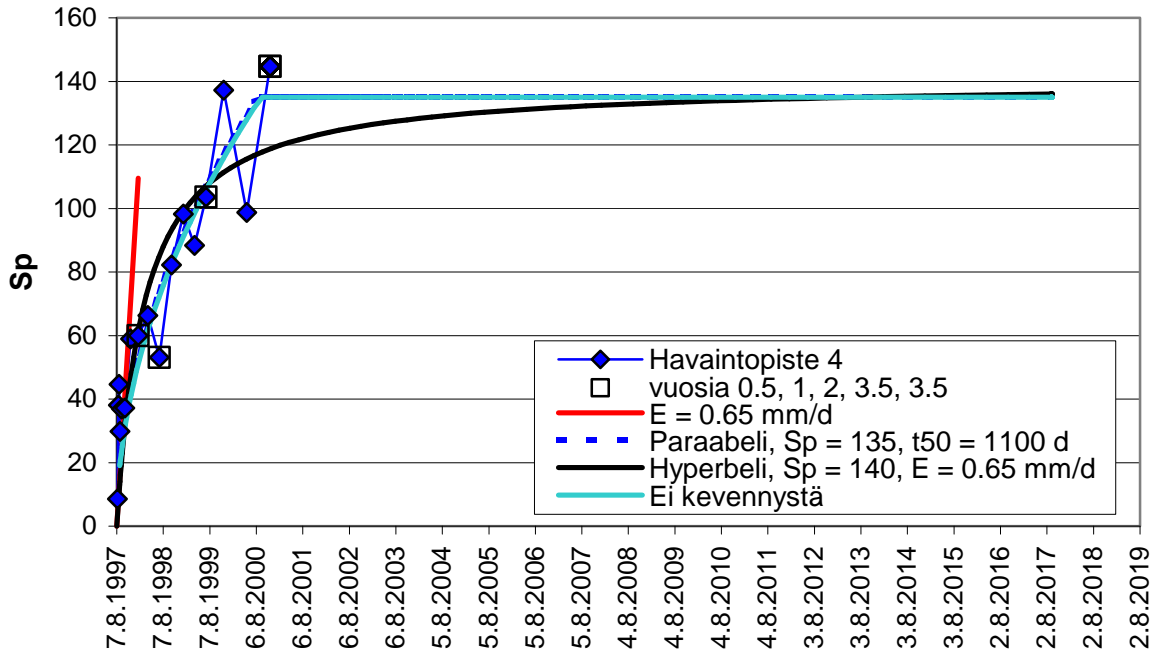
Aika-Painuma kuvaaja



Koepenger, Haarajoki mp, 3,5 v

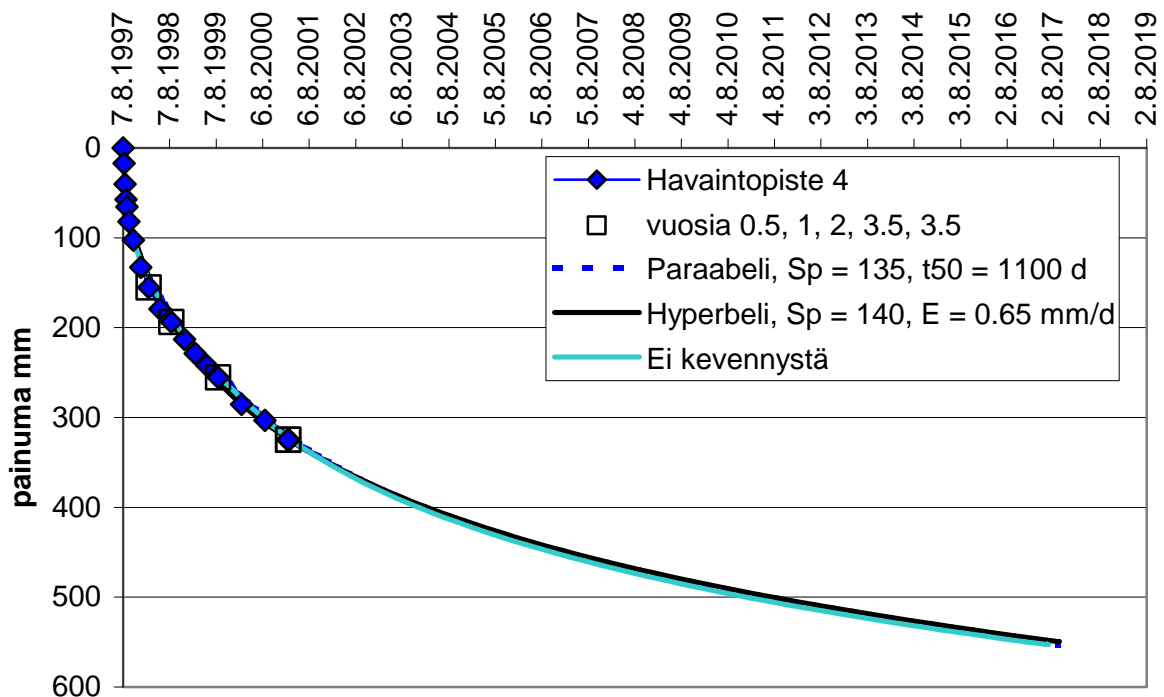
Havaintopiste 4

○ 1-puol. kl	H	w	m (b = 0)	m	alkupai.	t0 (d)	pain. t (a)	tod. t
● 2-puol. kl	19	100	5.4...9.1	5	65	22	20	20
input				80				
	Sp	t50/E	rs	B	c _v	pain. 20	virh. mm	
Paraabeli	135	1100	141	0.036	5.9	552	ei havaint.	
Hyperbeli	140	0.65	136	0.037		549	ei havaint.	



Aika-Painumapotentiaali kuvaaja

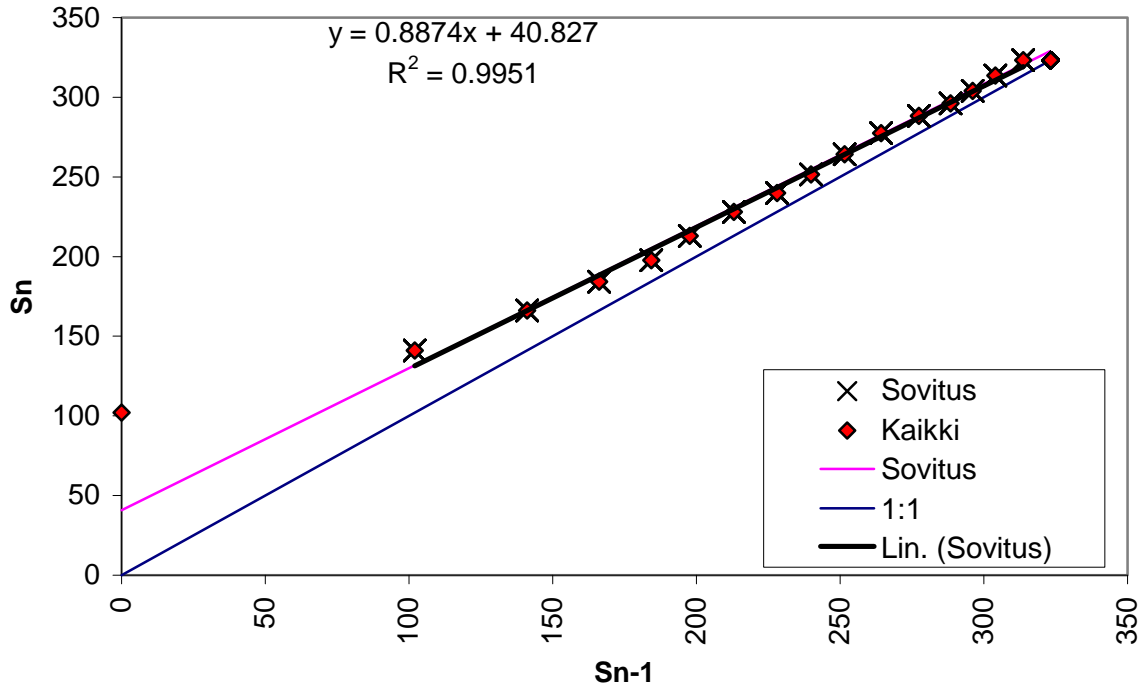
Aika-Painuma kuvaaja



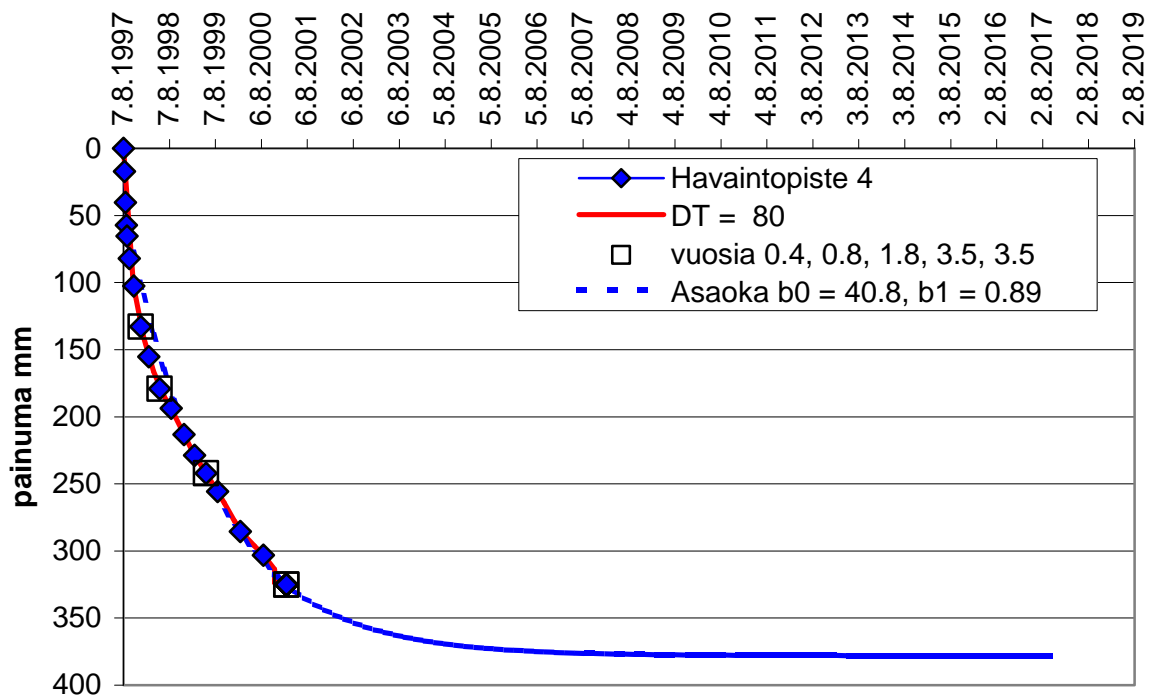


pain. t (a)	tod. t
20	19.9

input				output			
	β_0	β_1	t	Prim. Pain.		pain19.9	virh. mm
Asaoka	40.8	0.892	80.00	378		378	ei havaint.
	40.8	0.892	80.00				



Aika-Painuma kuvaaja





pain. t (a)

tod. t

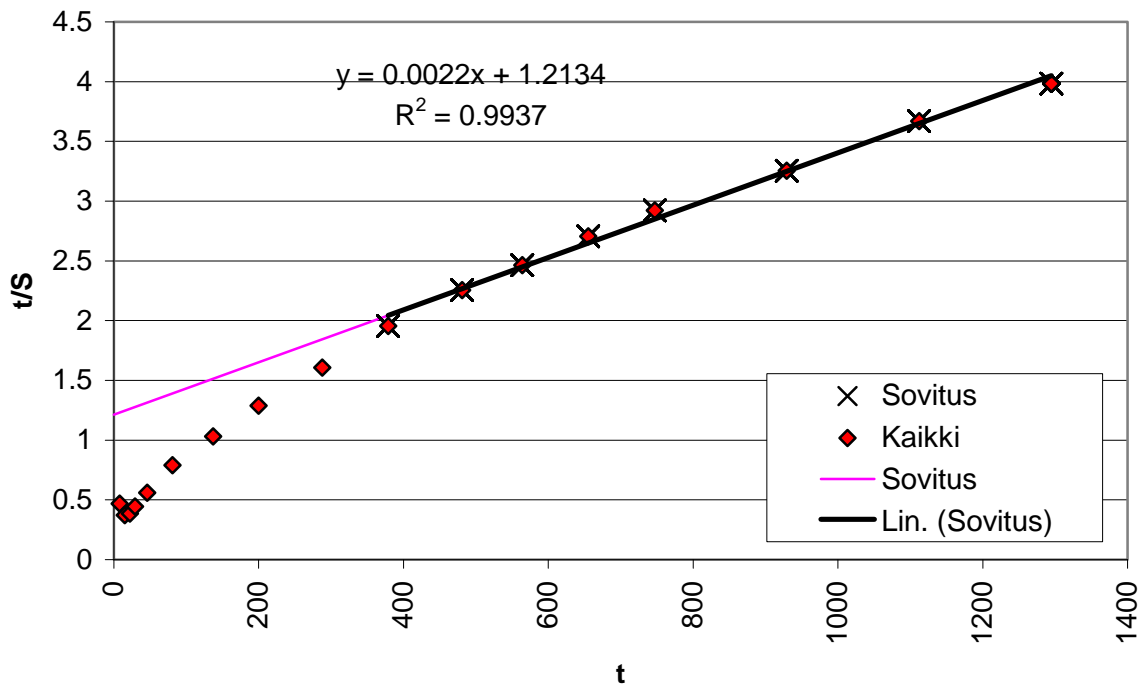
20

20

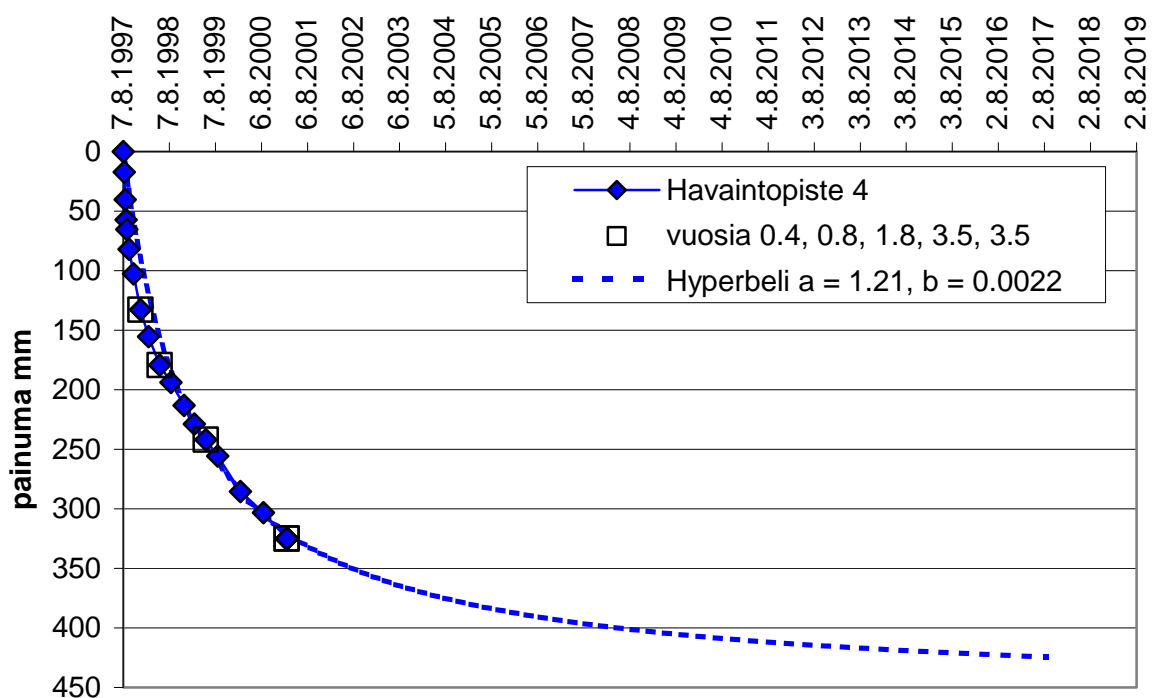
input

output

	a	b	Painuma		pain20	virh. mm
Hyperbeli	1.21	2.19E-03	456		424	ei havaint.



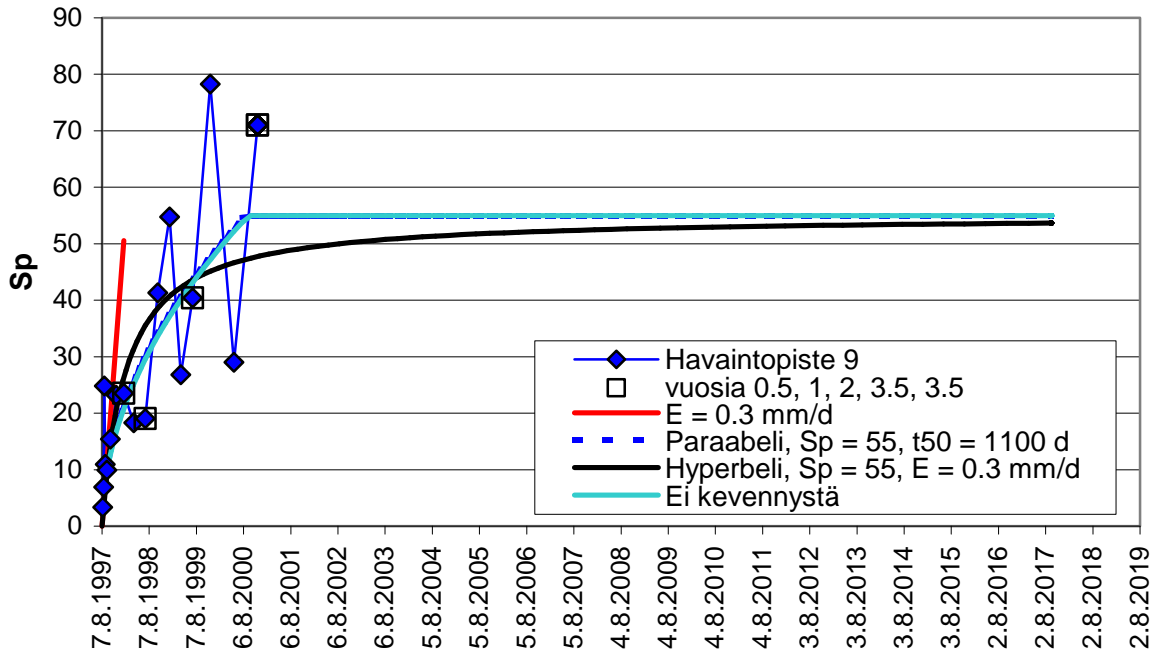
Aika-Painuma kuvaaja



Koepenger, Haarajoki mp, 3,5 v

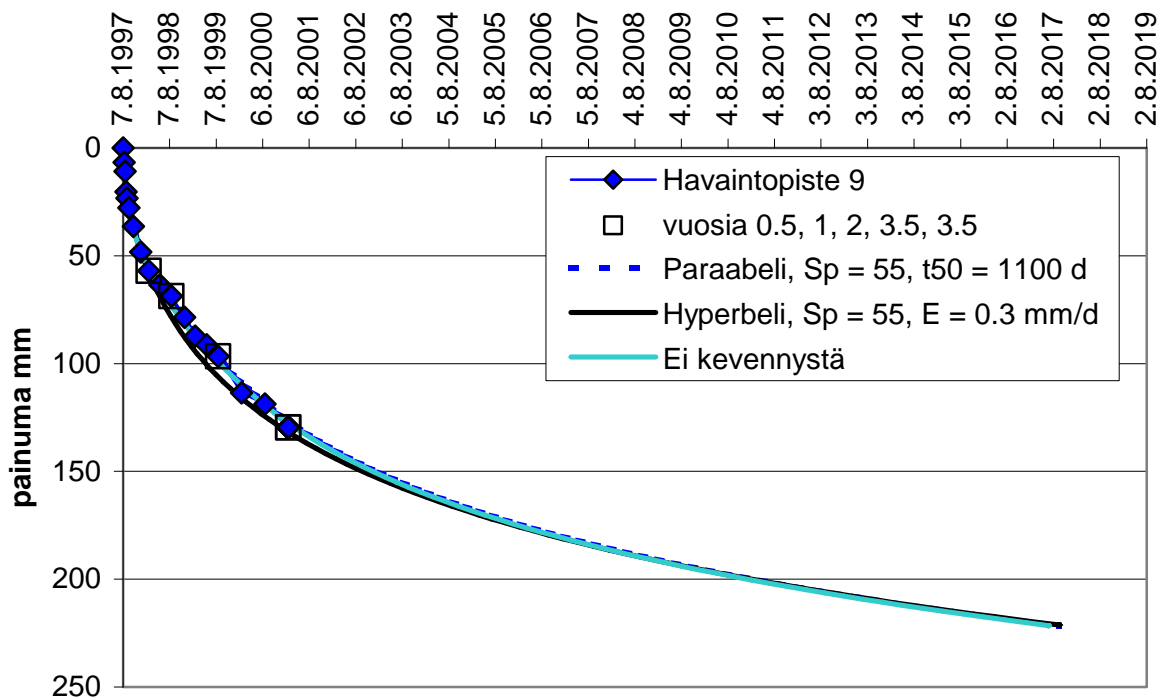
Havaintopiste 9

○ 1-puol. kl	H	w	m (b = 0)	m	alkupai.	t0 (d)	pain. t (a)	tod. t
● 2-puol. kl	19	100	5.4...9.1	5	25	29	20	20
input				80				
	Sp	t50/E	rs	B	c _v	pain. 20	virh. mm	
Paraabeli	55	1100	345	0.014	5.9	221	ei havaint.	
Hyperbeli	55	0.30	345	0.014		221	ei havaint.	



Aika-Painumapotentiaali kuvaaja

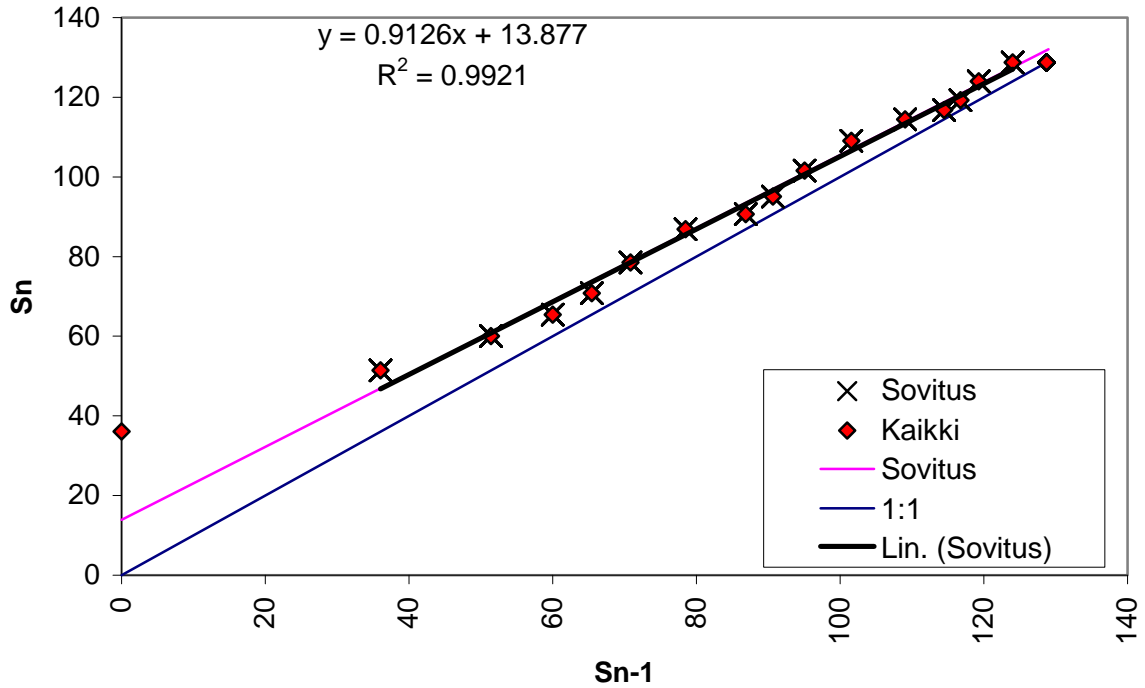
Aika-Painuma kuvaaja



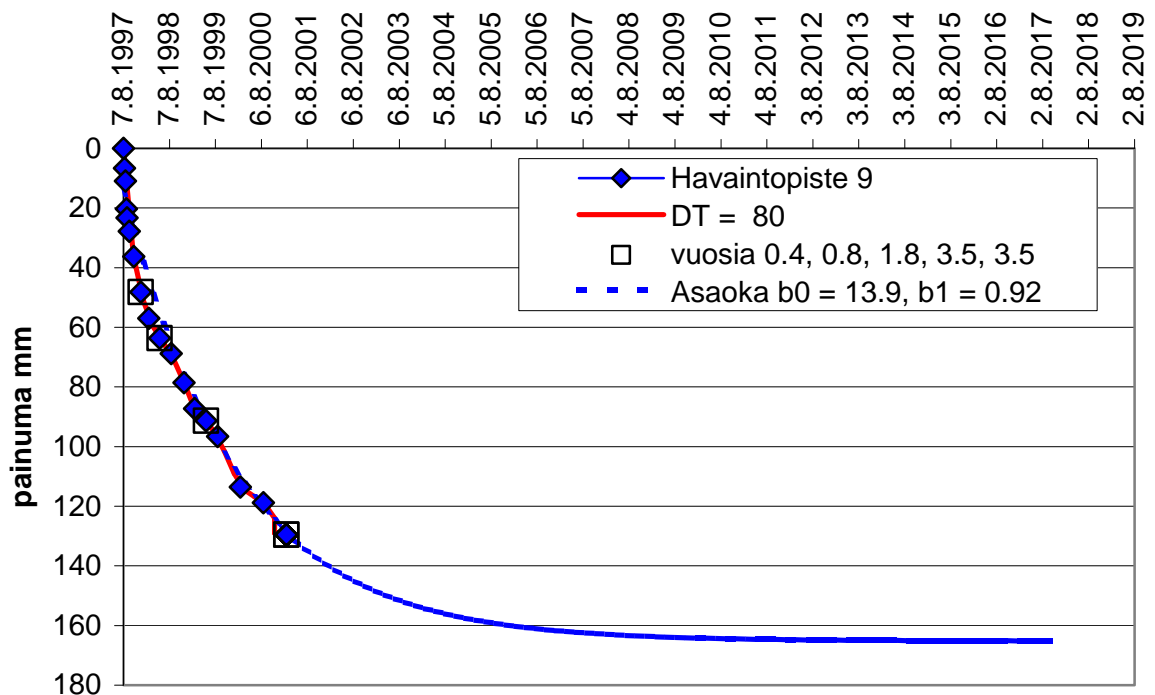


pain. t (a)	tod. t
20	19.9

input				output			
	β_0	β_1	t	Prim. Pain.		pain19.9	virh. mm
Asaoka	13.9	0.916	80.00	165		165	ei havaint.
	13.9	0.916	80.00				



Aika-Painuma kuvaaja





pain. t (a)

tod. t

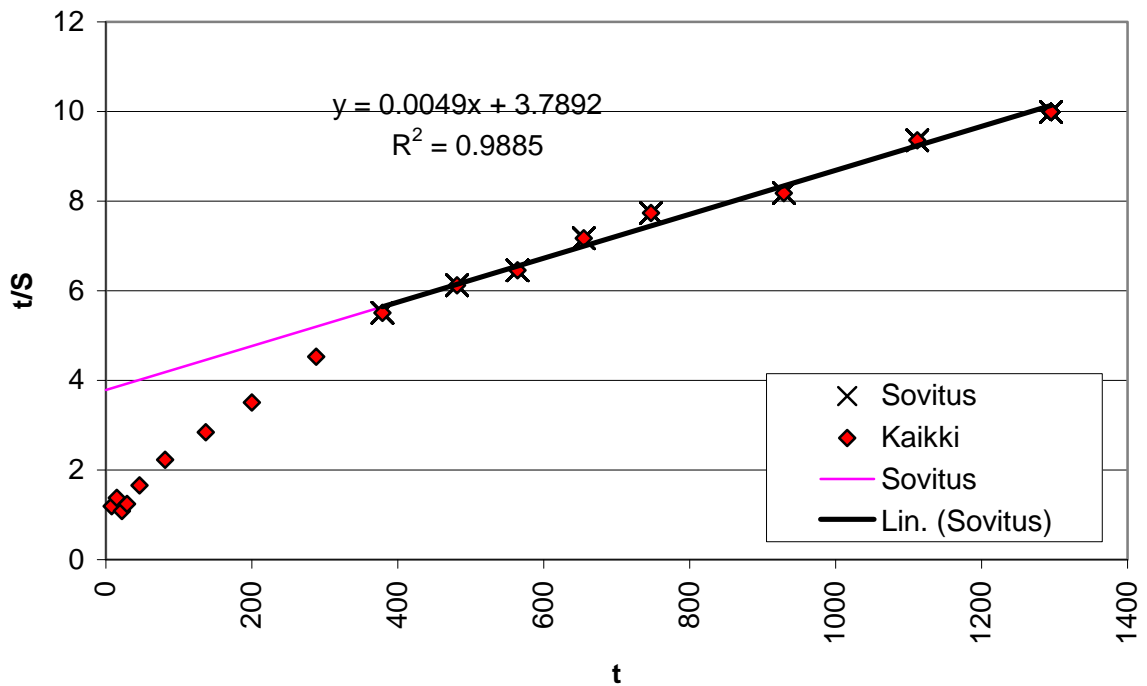
20

20

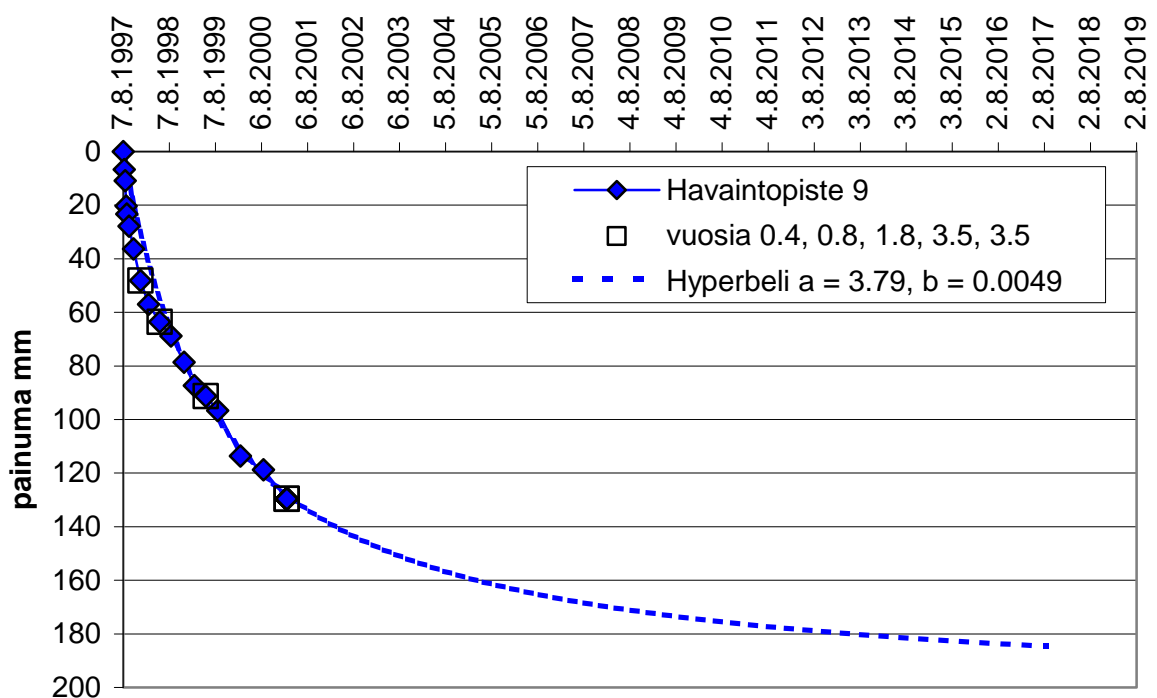
input

output

	a	b	Painuma	pain20	virh. mm
Hyperbeli	3.79	4.90E-03	204	185	ei havaint.



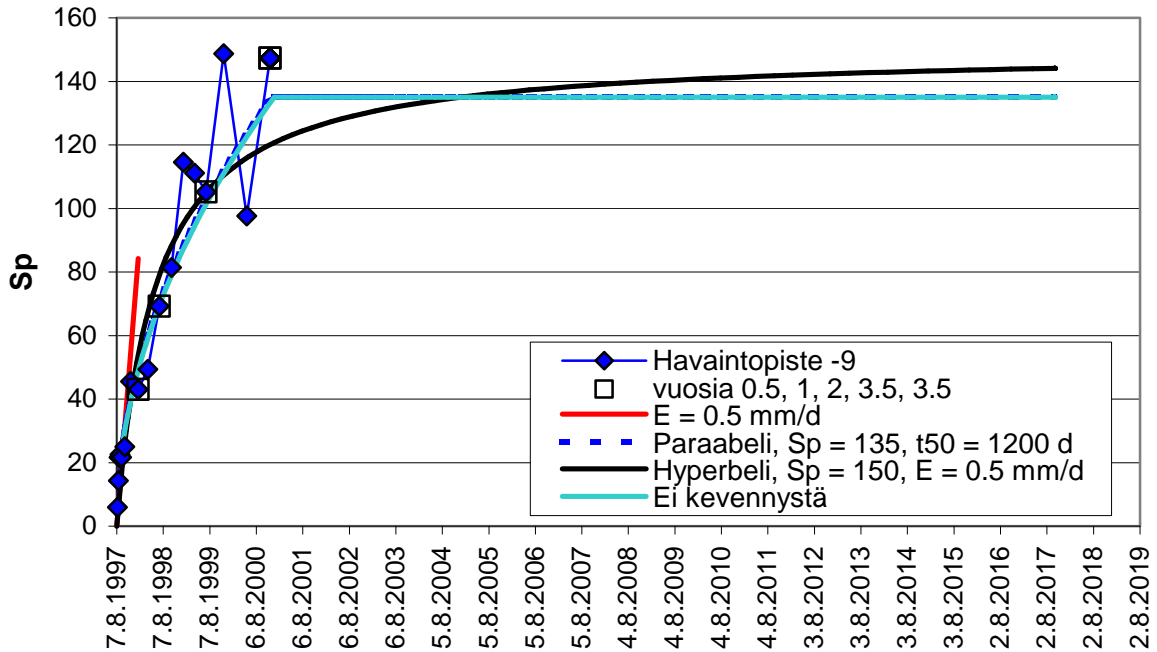
Aika-Painuma kuvaaja



Koepenger, Haarajoki pp, 3,5 v

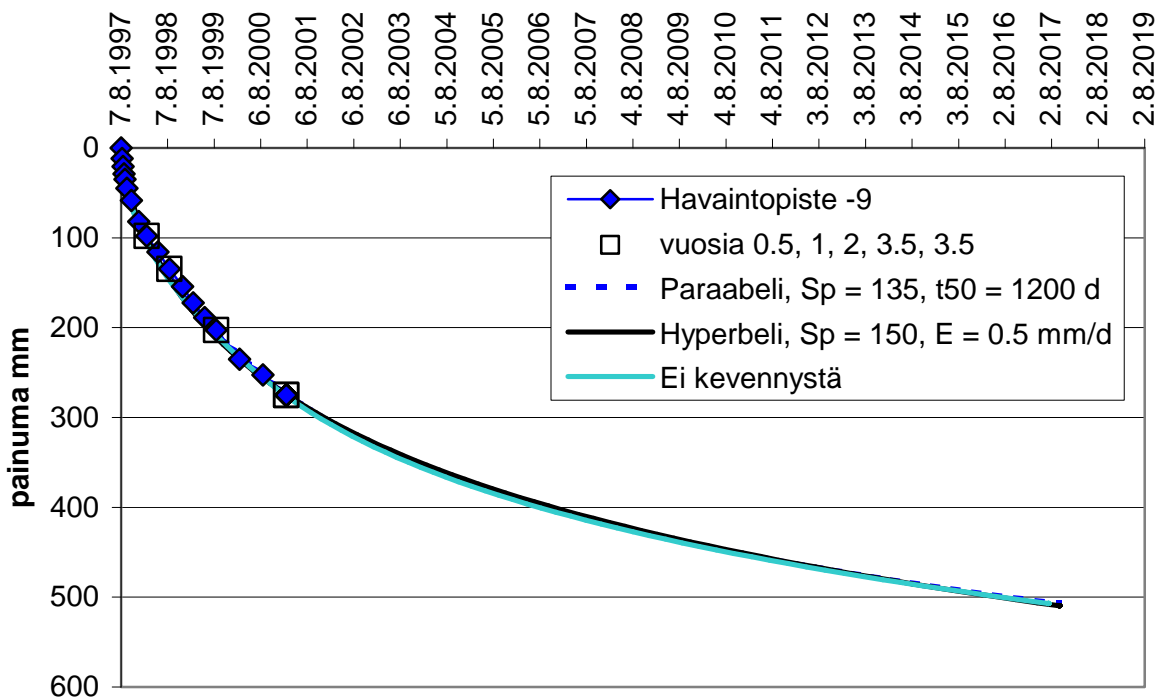
Havaintopiste -9

● 1-puol. kl	H	w	m (b = 0)	m	alkupai.	t0 (d)	pain. t (a)	tod. t
○ 2-puol. kl	21	65	8.3...14	7	45	46	20	20
input				80				
	Sp	t50/E	rs	B	c _v	pain. 20	virh. mm	
Paraabeli	135	1200	156	0.045	12.2	506	ei havaint.	
Hyperbeli	150	0.50	140	0.050		508	ei havaint.	



Aika-Painumapotentiaali kuvaaja

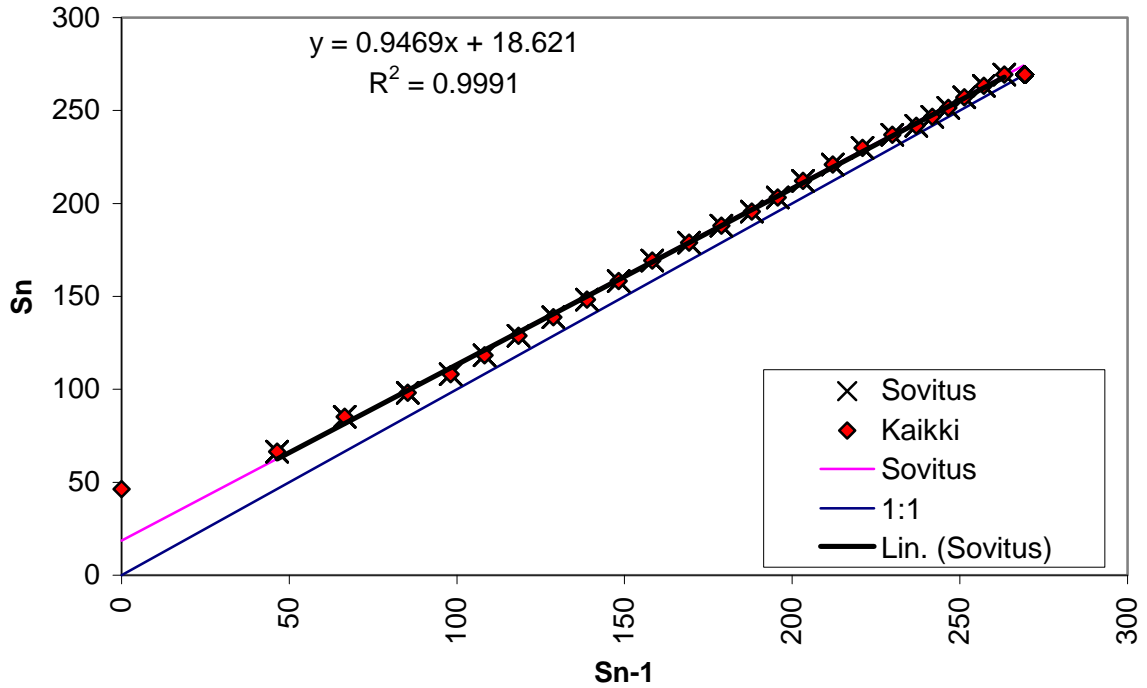
Aika-Painuma kuvaaja



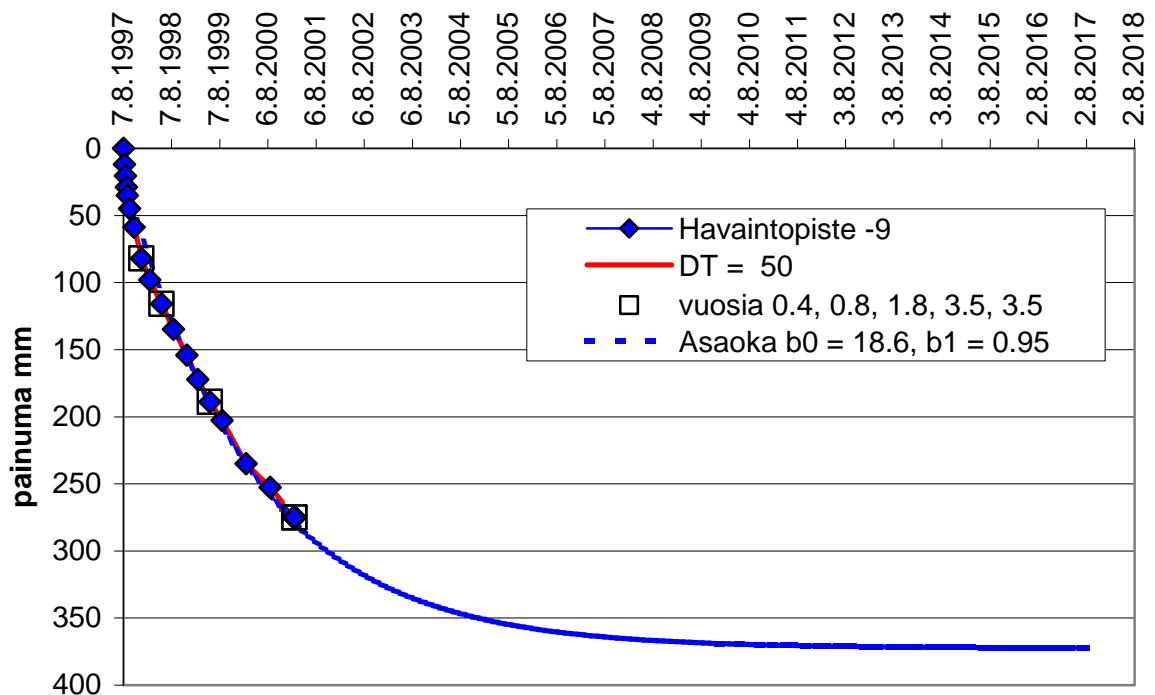


pain. t (a)	tod. t
20	20

input				output			
	β_0	β_1	t	Prim. Pain.		pain20	virh. mm
Asaoka	18.6	0.950	50.00	372		372	ei havaint.
	18.6	0.950	50.00				



Aika-Painuma kuvaaja





pain. t (a)

tod. t

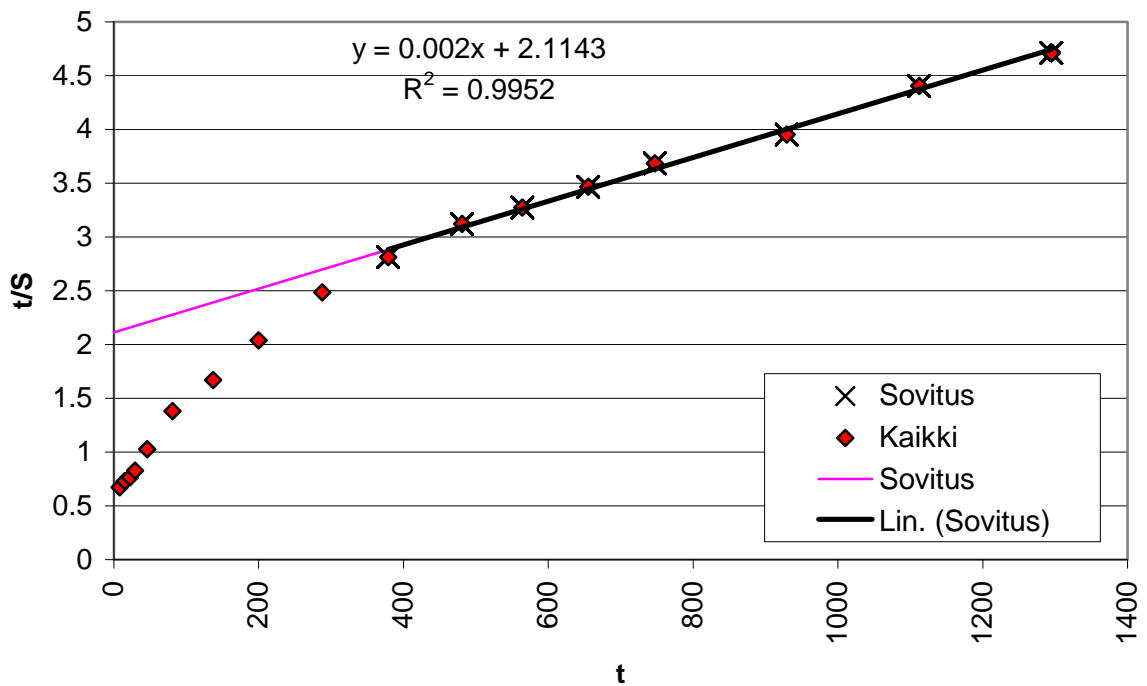
20

20

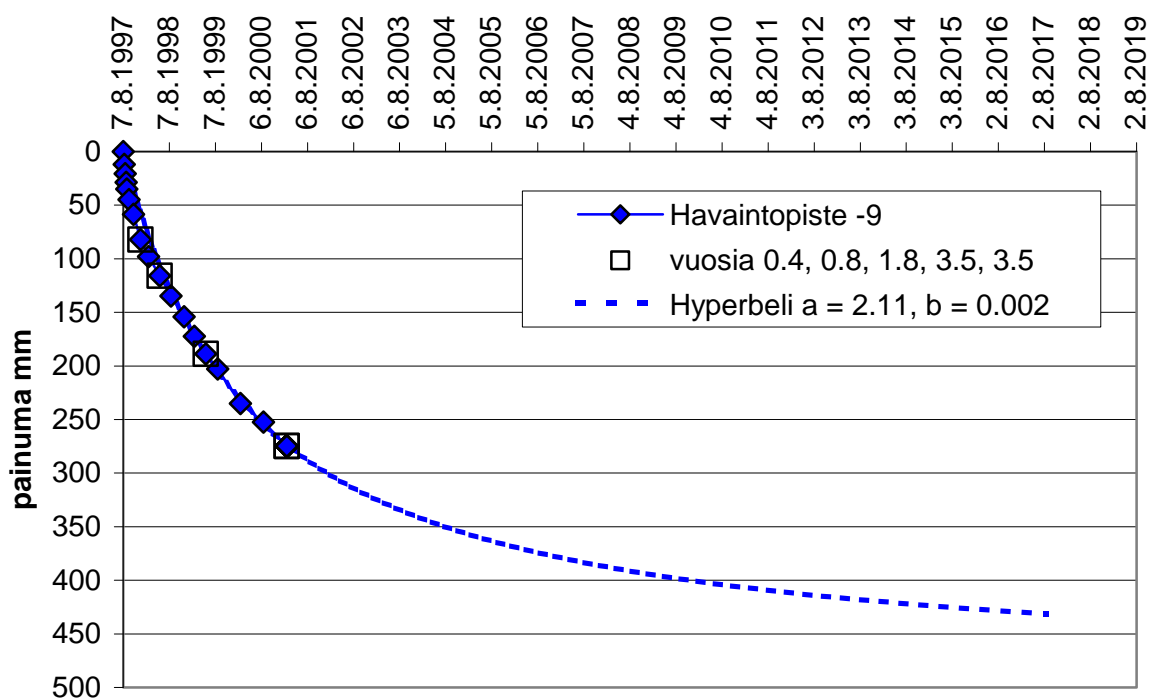
input

output

	a	b	Painuma	pain20	virh. mm
Hyperbeli	2.11	2.03E-03	493	431	ei havaint.



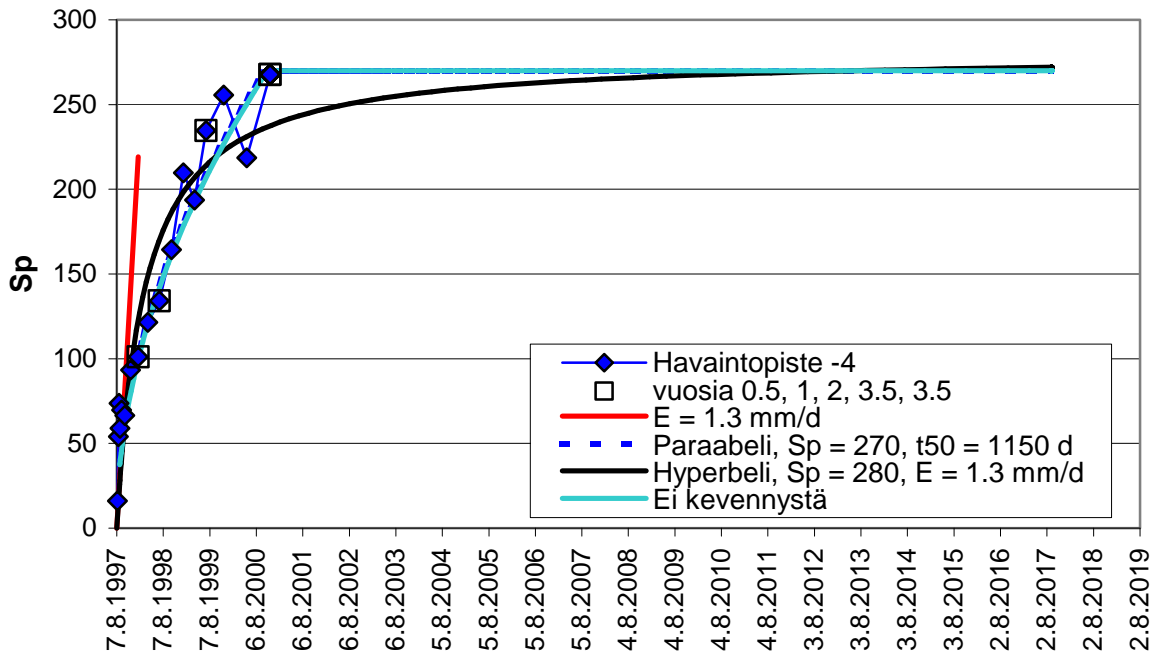
Aika-Painuma kuvaaja



Koepenger, Haarajoki pp, 3,5 v

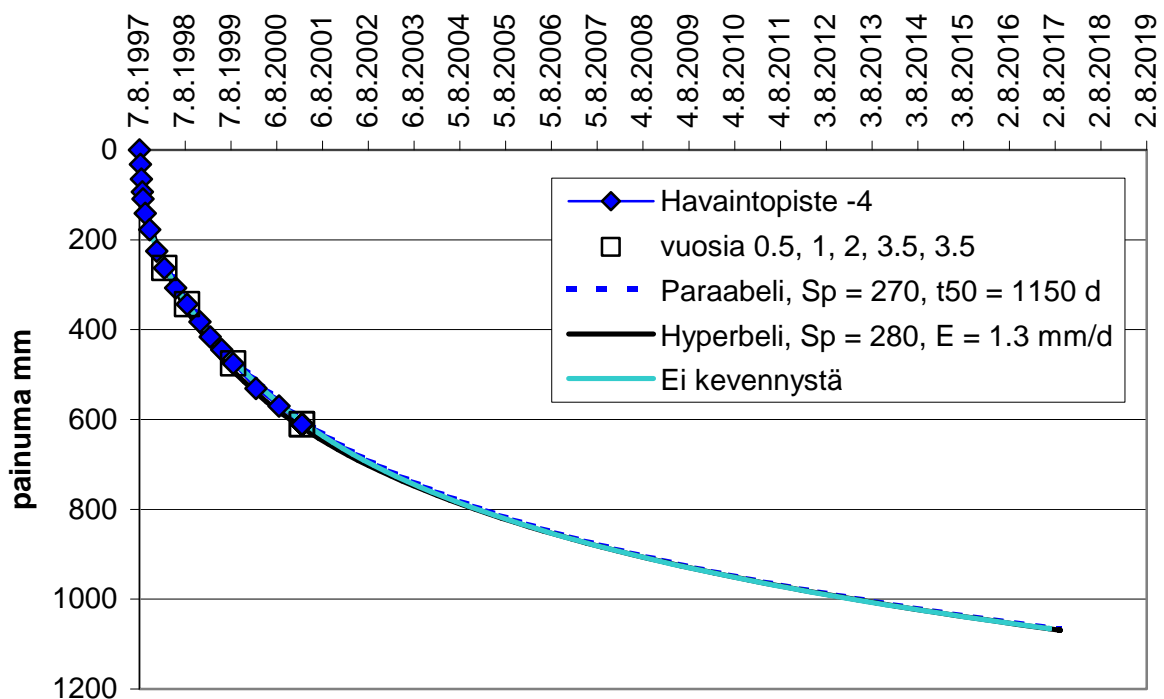
Havaintopiste -4

● 1-puol. kl	H	w	m (b = 0)	m	alkupai.	t0 (d)	pain. t (a)	tod. t
○ 2-puol. kl	21	65	8.3...14	7	100	22	20	20
input				80				
	Sp	t50/E	rs	B	c _v	pain. 20	virh. mm	
Paraabeli	270	1150	78	0.090	12.7	1064	ei havaint.	
Hyperbeli	280	1.30	75	0.093		1067	ei havaint.	



Aika-Painumapotentiaali kuvaaja

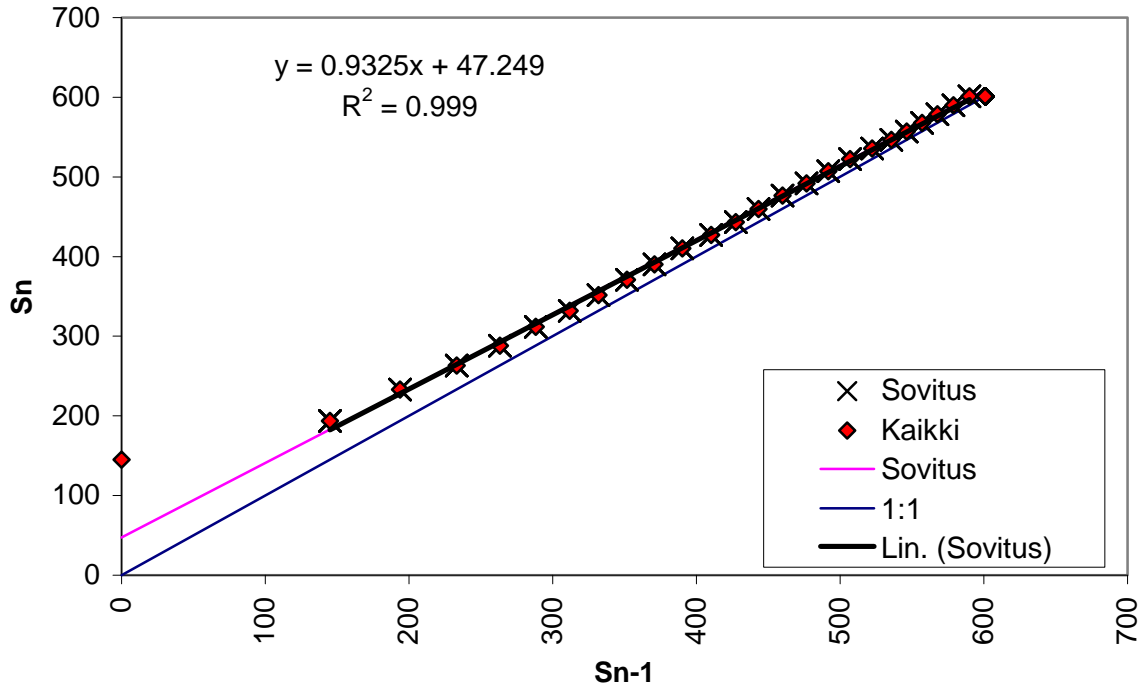
Aika-Painuma kuvaaja



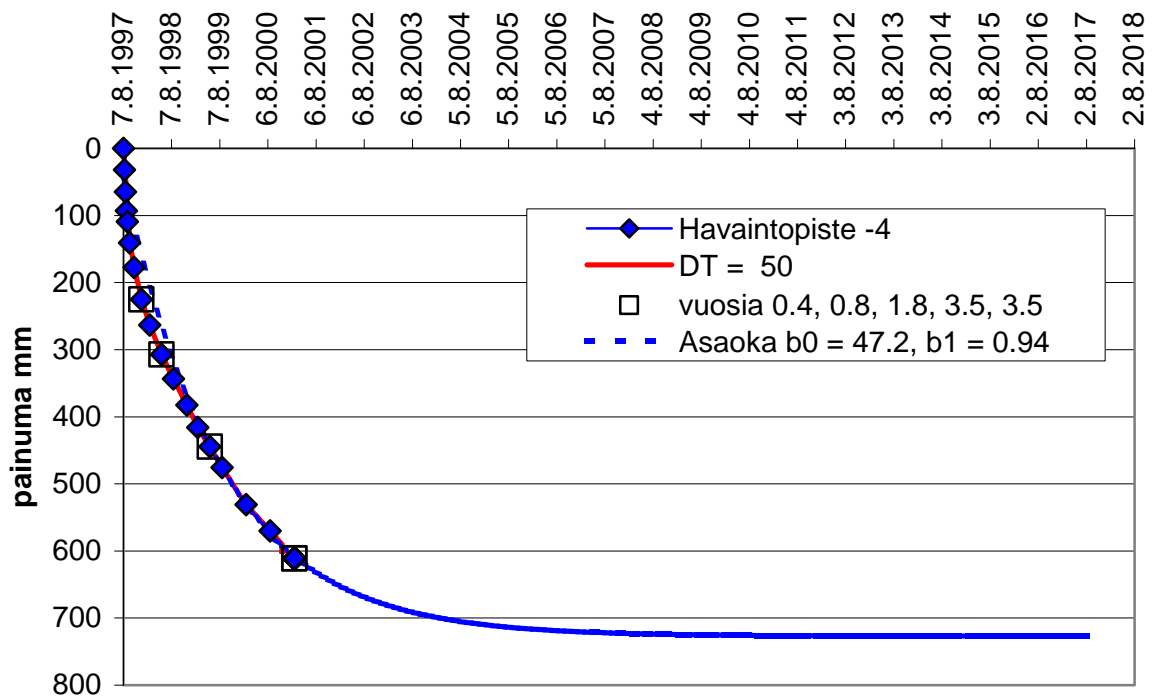


pain. t (a)	tod. t
20	20

input				output			
	β_0	β_1	t	Prim. Pain.		pain20	virh. mm
Asaoka	47.2	0.935	50.00	727		727	ei havaint.
	47.2	0.935	50.00				



Aika-Painuma kuvaaja





pain. t (a)

tod. t

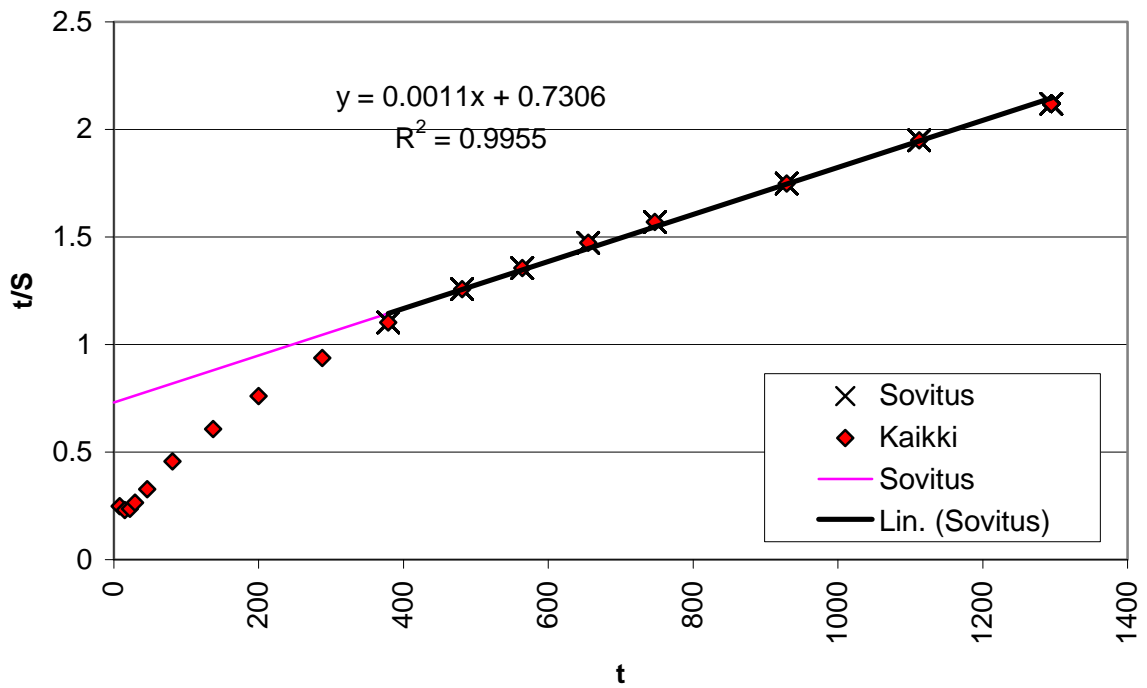
20

20

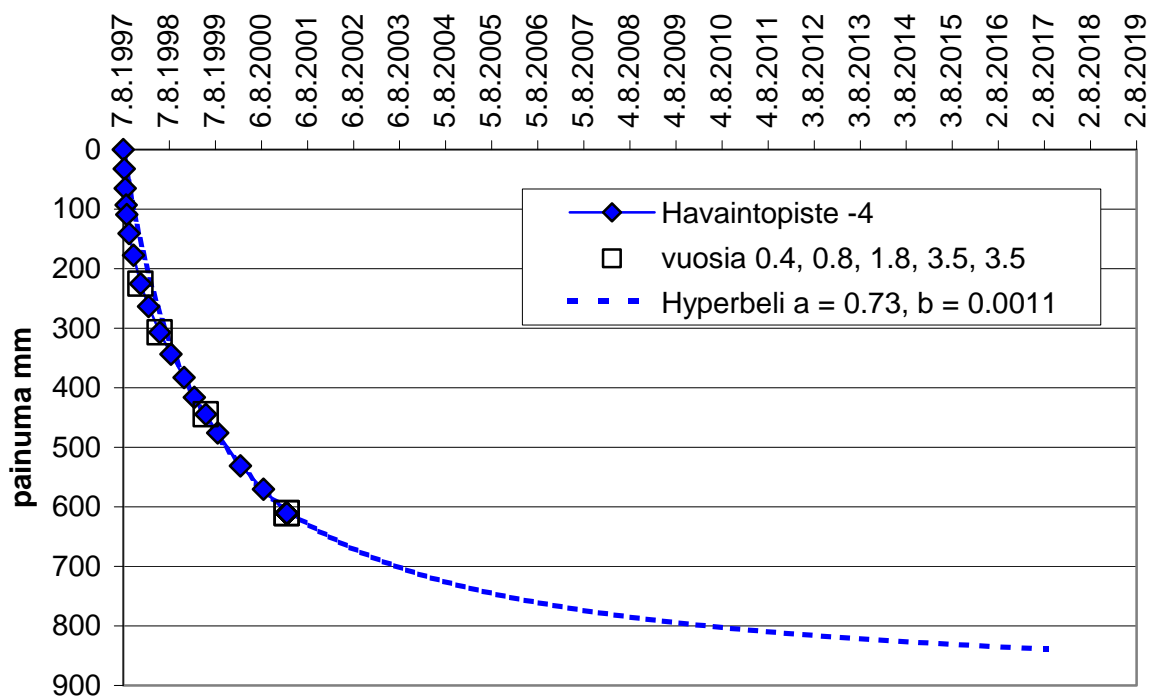
input

output

	a	b	Painuma		pain20	virh. mm
Hyperbeli	0.73	1.09E-03	915		839	ei havaint.



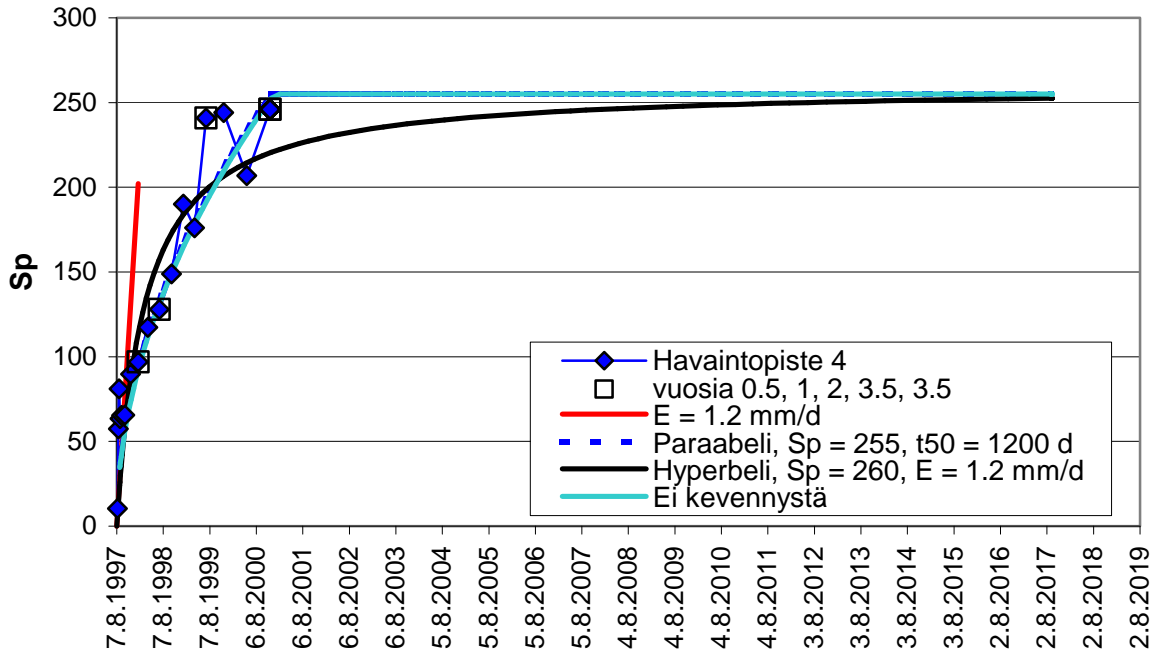
Aika-Painuma kuvaaja



Koepenger, Haarajoki pp, 3,5 v

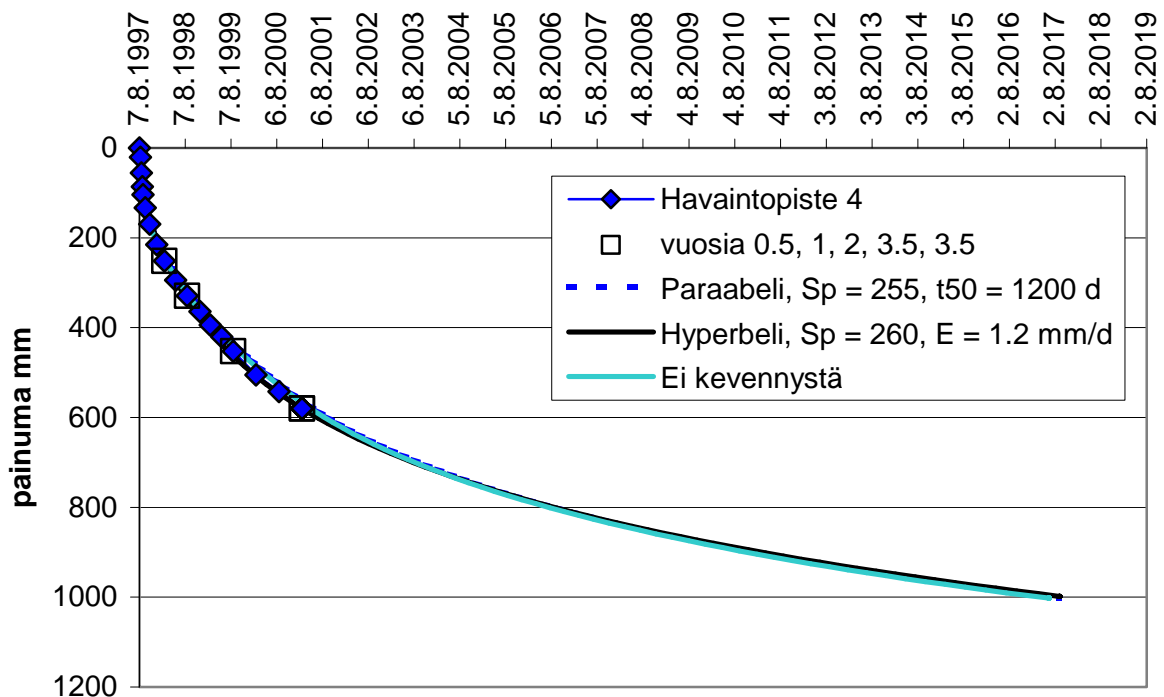
Havaintopiste 4

● 1-puol. kl	H	w	m (b = 0)	m	alkupai.	t0 (d)	pain. t (a)	tod. t
○ 2-puol. kl	21	65	8.3...14	7	100	22	20	20
input				80				
	Sp	t50/E	rs	B	c _v	pain. 20	virh. mm	
Paraabeli	255	1200	82	0.085	12.2	1001	ei havaint.	
Hyperbeli	260	1.20	81	0.087		997	ei havaint.	



Aika-Painumapotentiaali kuvaaja

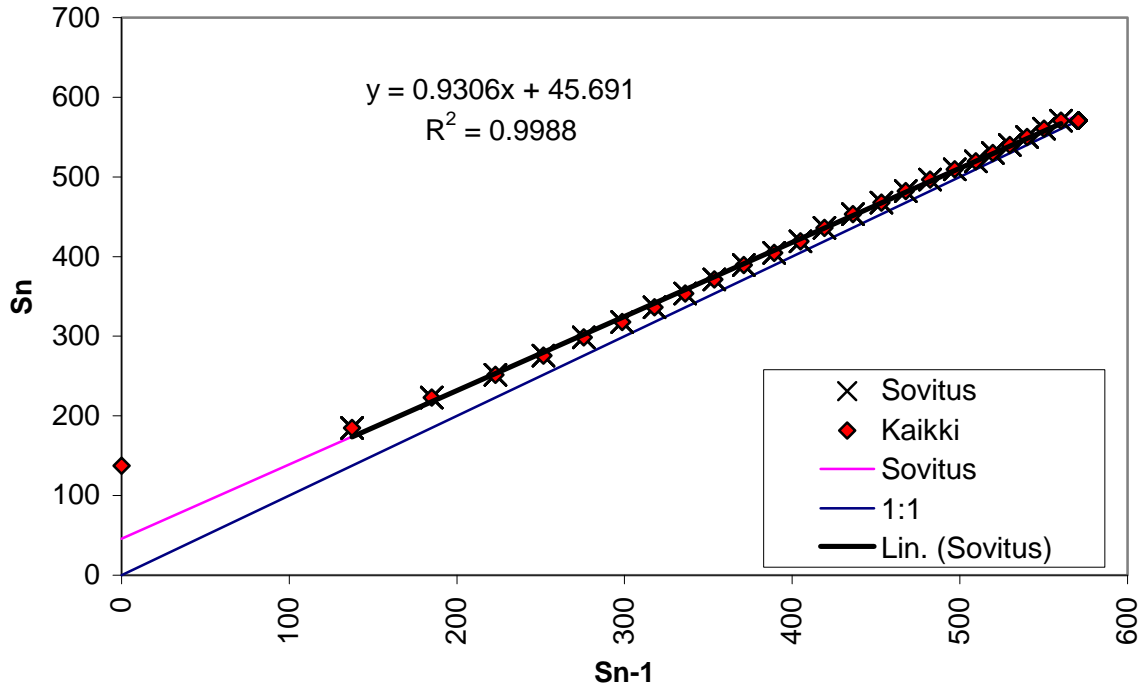
Aika-Painuma kuvaaja



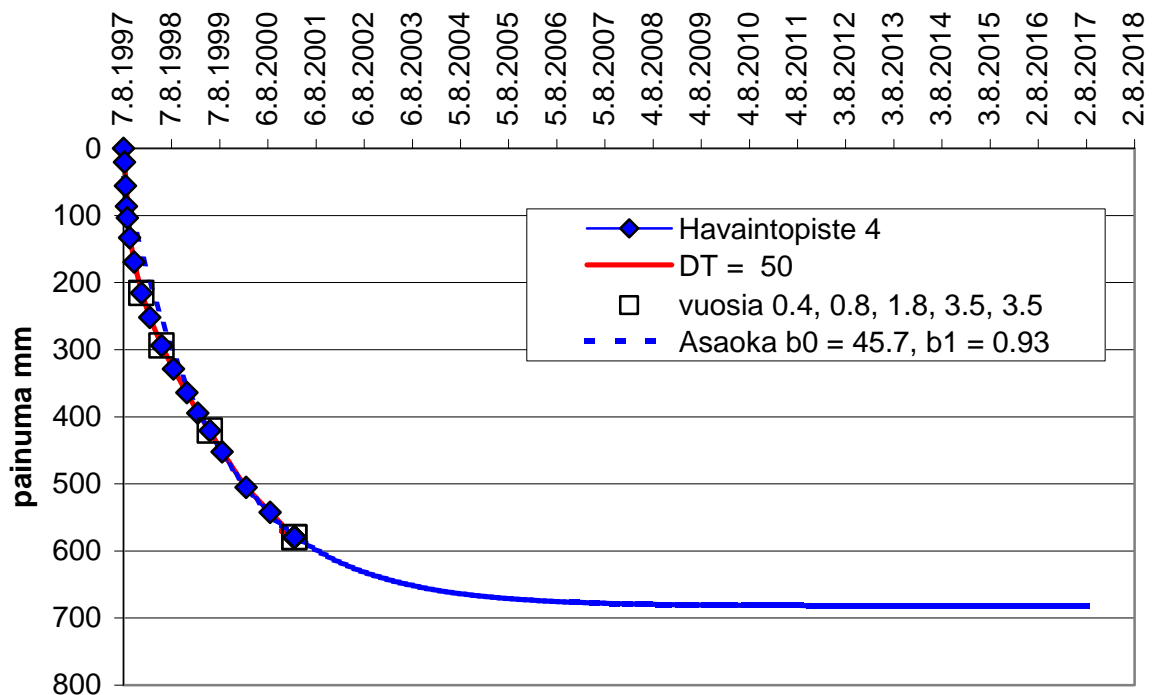


pain. t (a)	tod. t
20	20

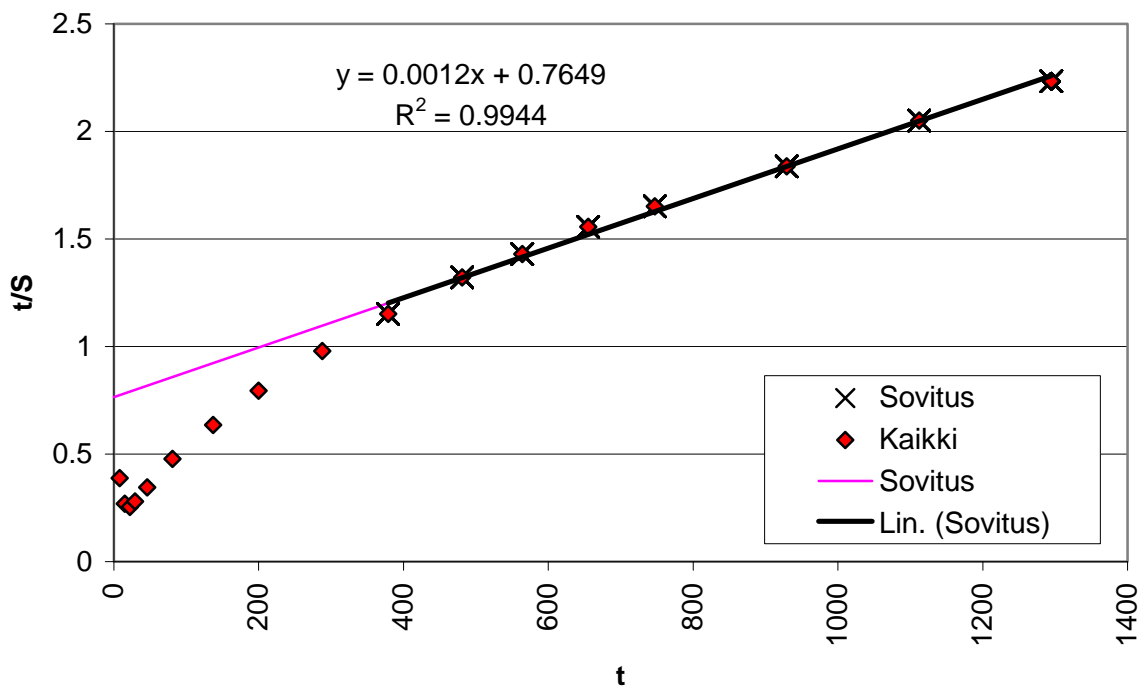
input				output			
	β_0	β_1	t	Prim. Pain.		pain20	virh. mm
Asaoka	45.7	0.933	50.00	682		682	ei havaint.
	45.7	0.933	50.00				



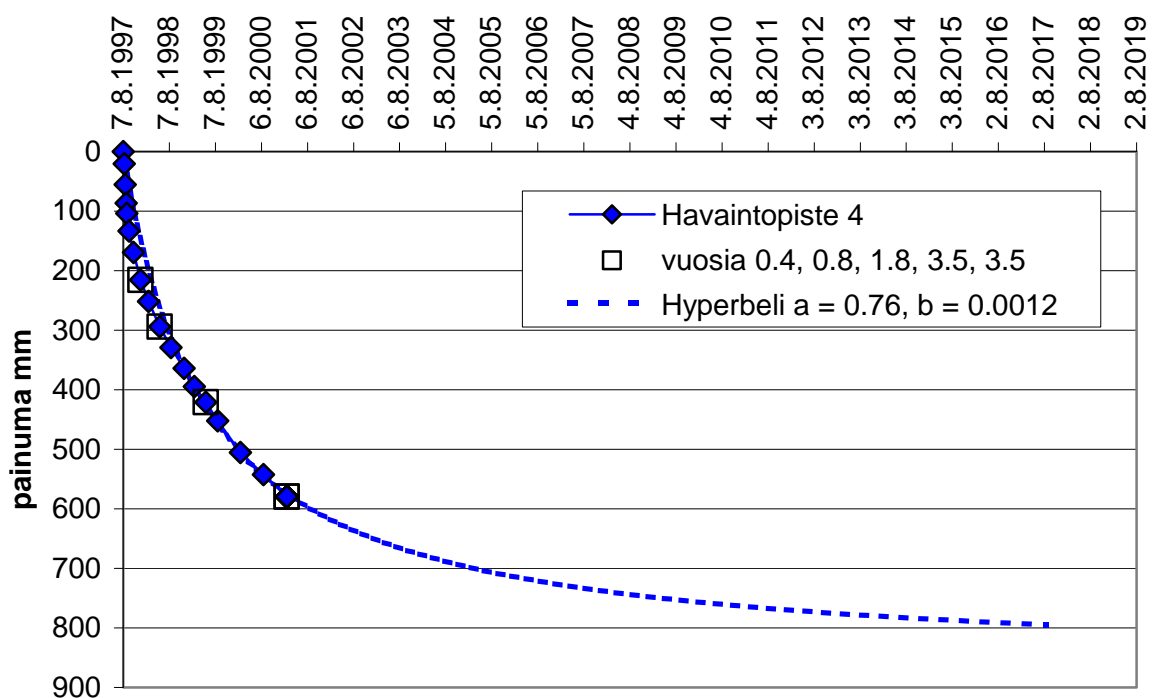
Aika-Painuma kuvaaja



Painumaennuste		Hyperbeli		LIITE III / s. 45	
Koepenger,Haarajoki pp, 3,5 v				Havaintopiste 4	
				pain. t (a)	tod. t
				20	20
input			output		
	a	b	Painuma		virh. mm
Hyperbeli	0.76	1.15E-03	866	794	ei havaint.



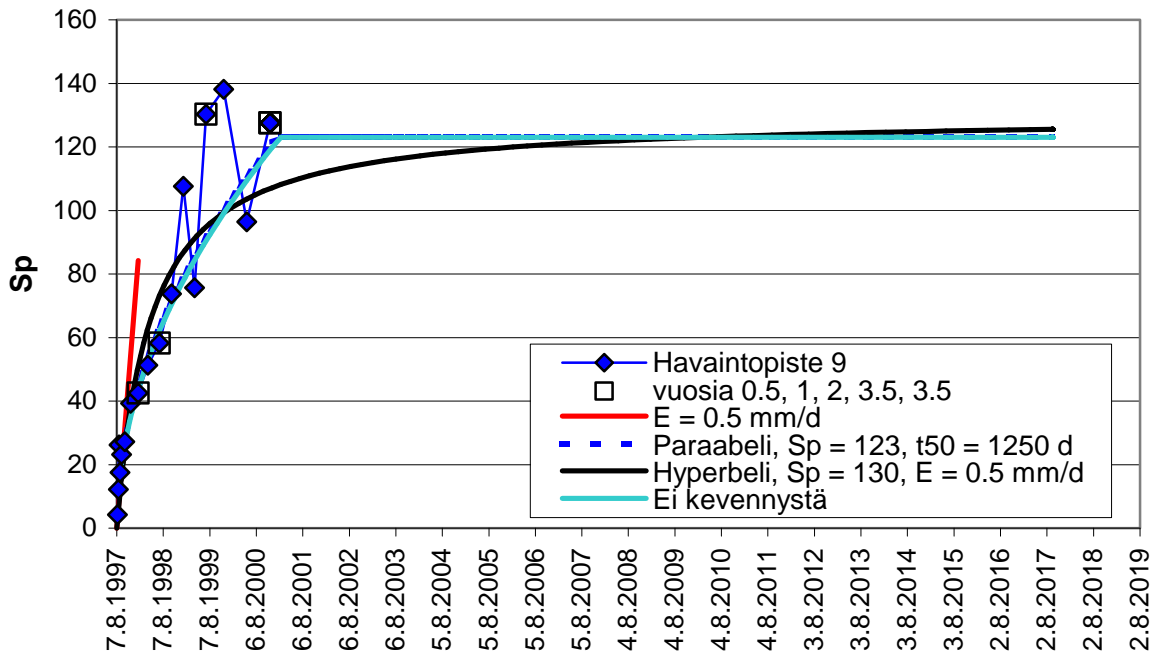
Aika-Painuma kuvaaja



Koepenger, Haarajoki pp, 3,5 v

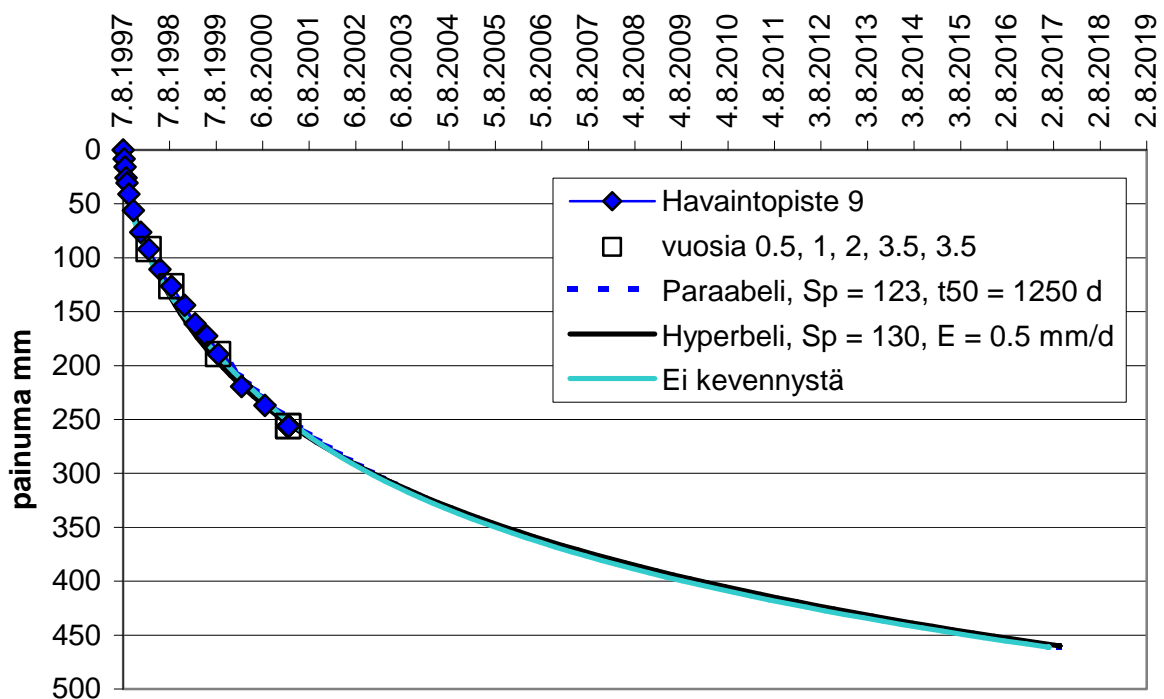
Havaintopiste 9

● 1-puol. kl	H	w	m (b = 0)	m	alkupai.	t0 (d)	pain. t (a)	tod. t
○ 2-puol. kl	21	65	8.3...14	7	35	29	20	20
input				80				
	Sp	t50/E	rs	B	c _v	pain. 20	virh. mm	
Paraabeli	123	1250	171	0.041	11.7	461	ei havaint.	
Hyperbeli	130	0.50	162	0.043		459	ei havaint.	

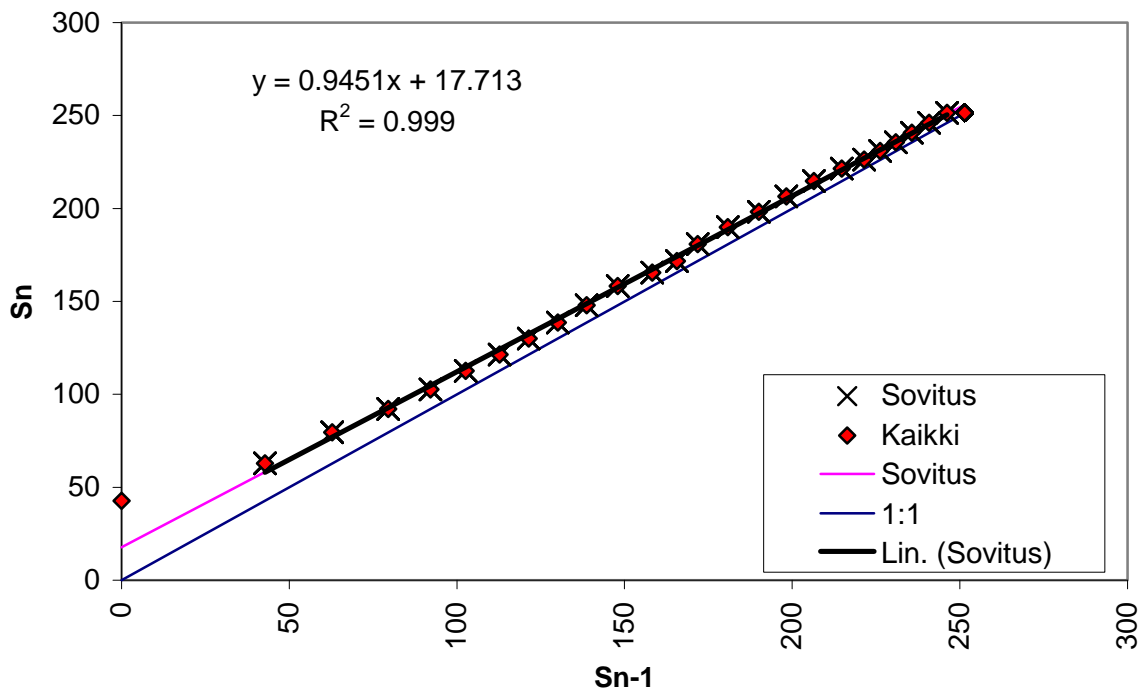


Aika-Painumapotentiaali kuvaaja

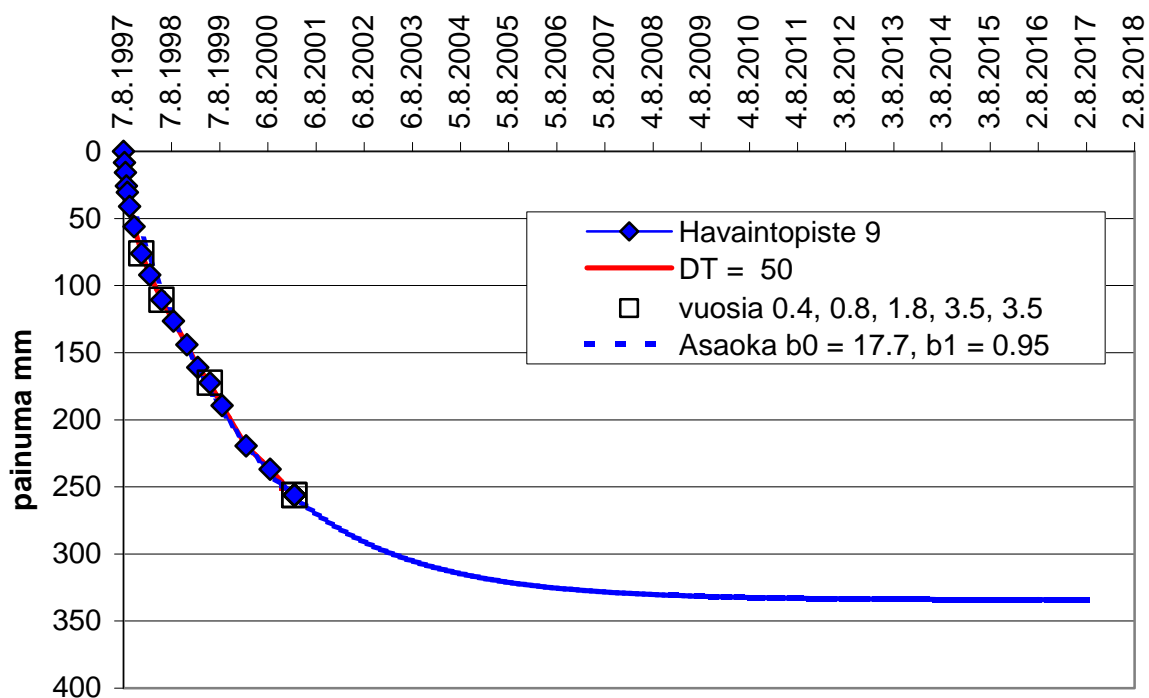
Aika-Painuma kuvaaja



Painumaennuste			Asaoka		LIITE III / s. 47		
Koepenger,Haarajoki pp, 3,5 v					Havaintopiste 9		▼
					pain. t (a)	tod. t	
					20	20	
input				output			
	β_0	β_1	t	Prim. Pain.		pain20	virh. mm
Asaoka	17.7	0.947	50.00	334		334	ei havaint.
	17.7	0.947	50.00				



Aika-Painuma kuvaaja





pain. t (a)

tod. t

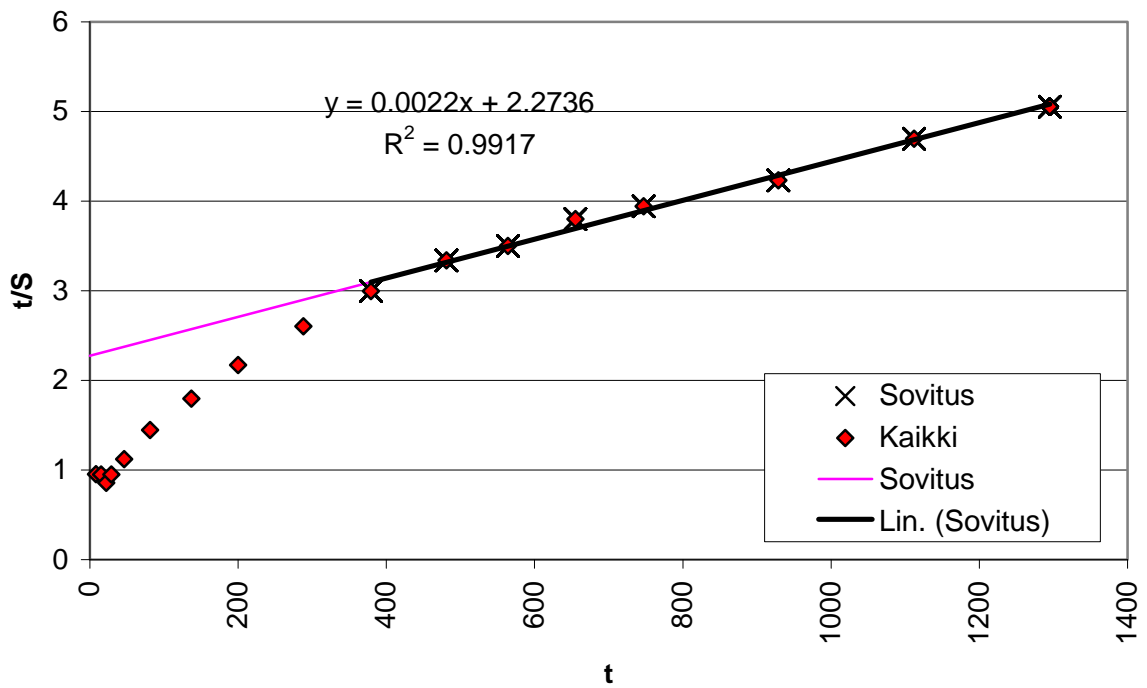
20

20

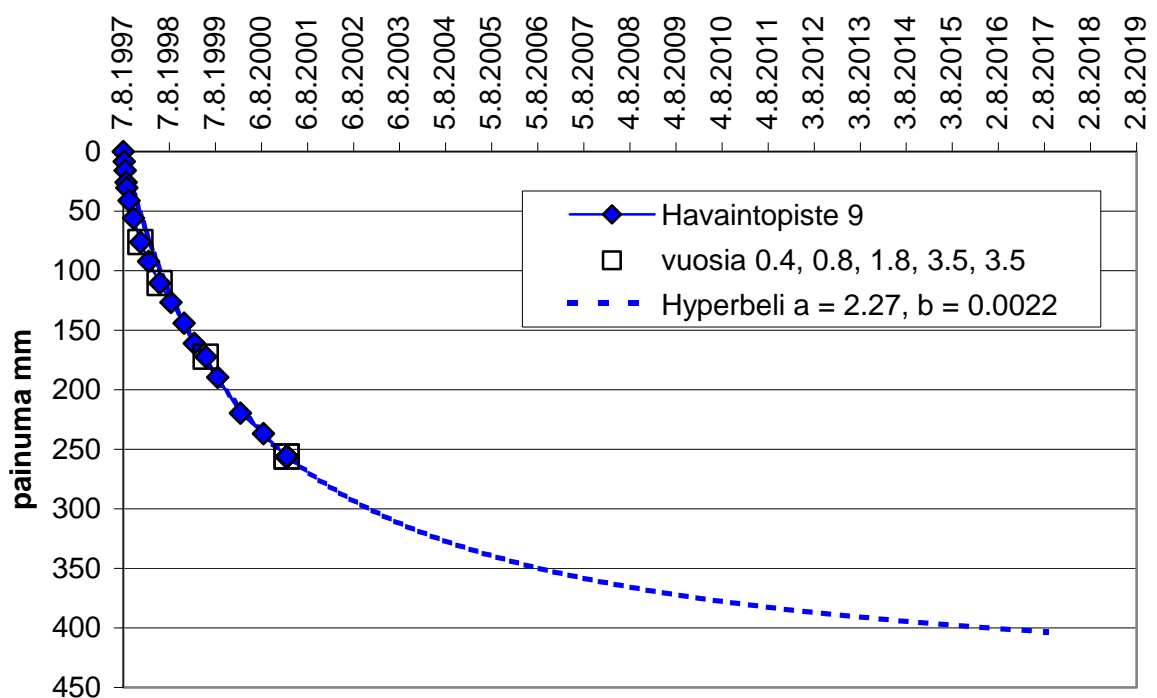
input

output

	a	b	Painuma		pain20	virh. mm
Hyperbeli	2.27	2.17E-03	461		403	ei havaint.



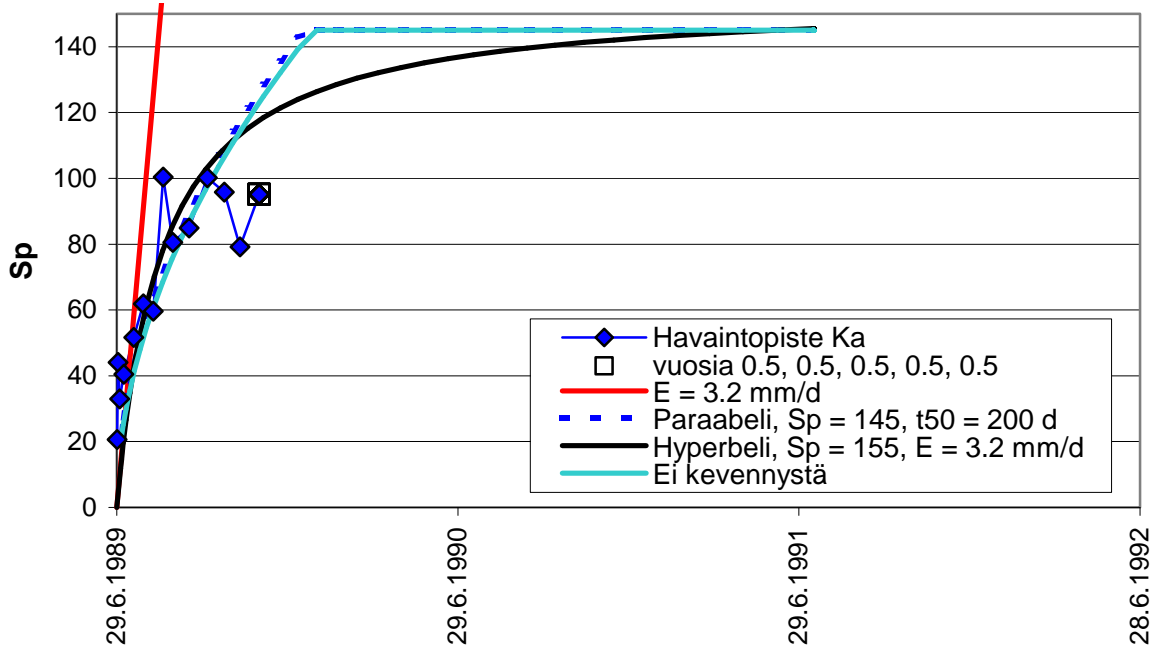
Aika-Painuma kuvaaja



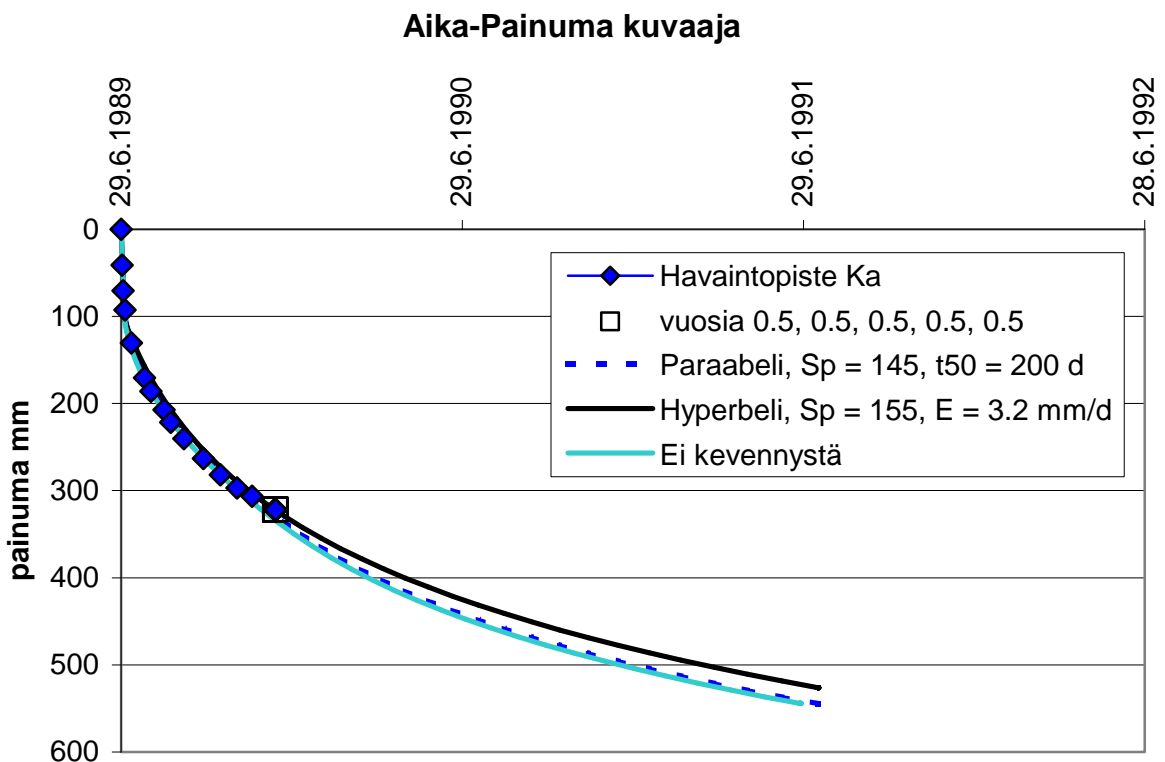
Koepenger, Vaasa, 6 kk

Havaintopiste Ka

○ 1-puol. kl.	H	w	m (b = 0)	m	alkupai.	t0 (d)	pain. t (a)	tod. t
● 2-puol. kl.	15	90	6...10.1	7	105	4	3	3
input				80				
	Sp	t50/E	rs	B	c _v	pain. 3	virh. mm	
Paraabeli	145	200	103	0.068	20.1	601	ei havaint.	
Hyperbeli	155	3.20	97	0.072		583	ei havaint.	



Aika-Painumapotentialiaali kuvaaja



Aika-Painuma kuvaaja



pain. t (a)

tod. t

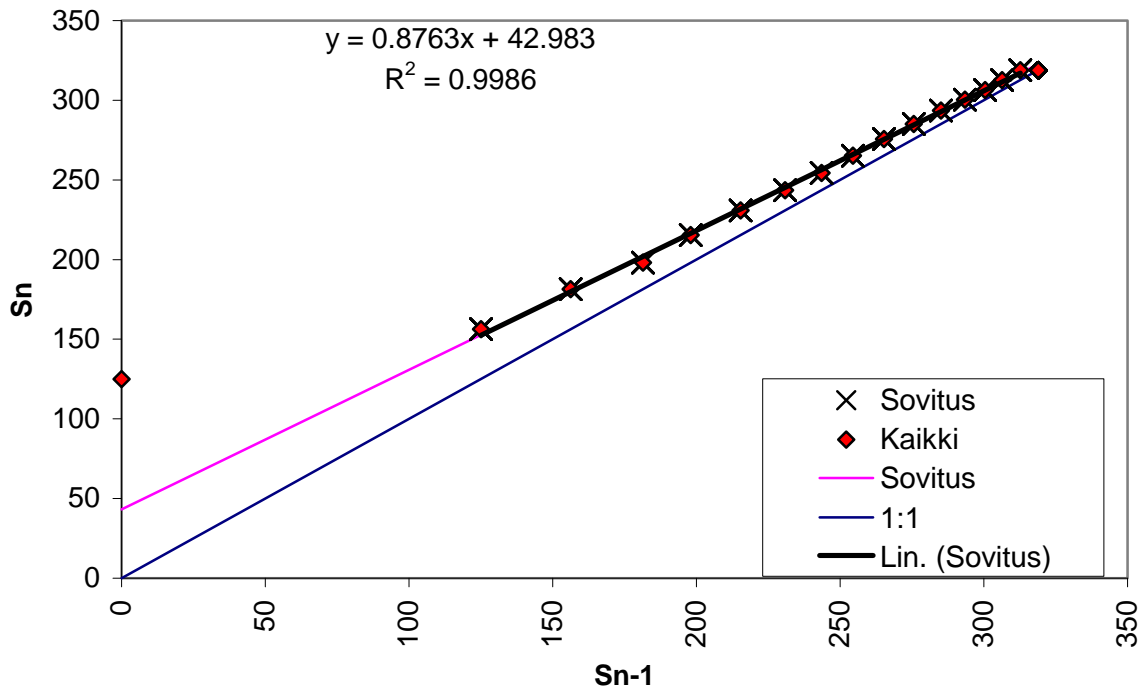
3

3

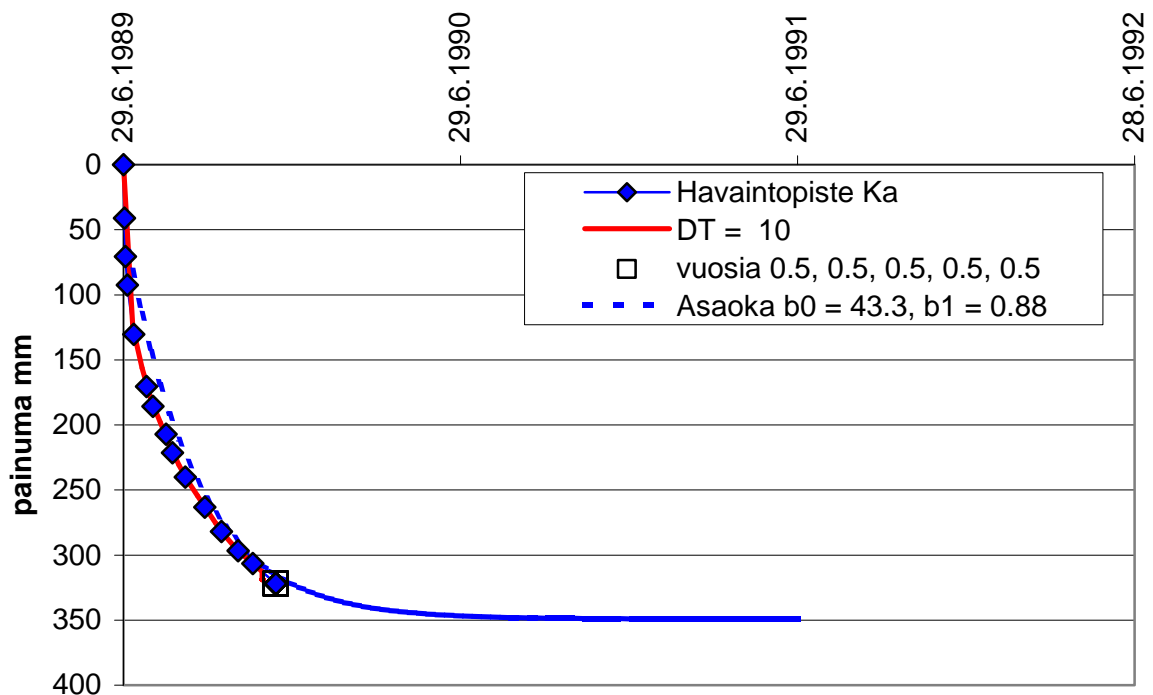
input

output

	β_0	β_1	t	Prim. Pain.	pain3	virh. mm
Asaoka	43.3	0.876	10.00	349	349	ei havaint.
	43.3	0.876	10.00			



Aika-Painuma kuvaaja





pain. t (a)

tod. t

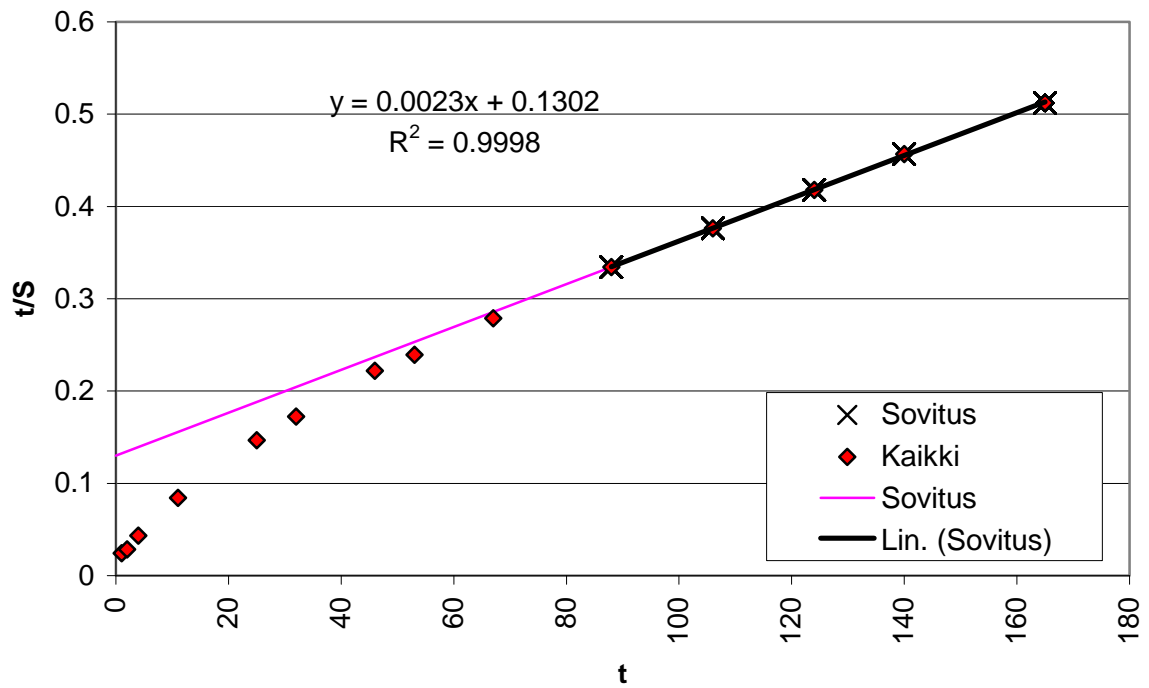
3

3

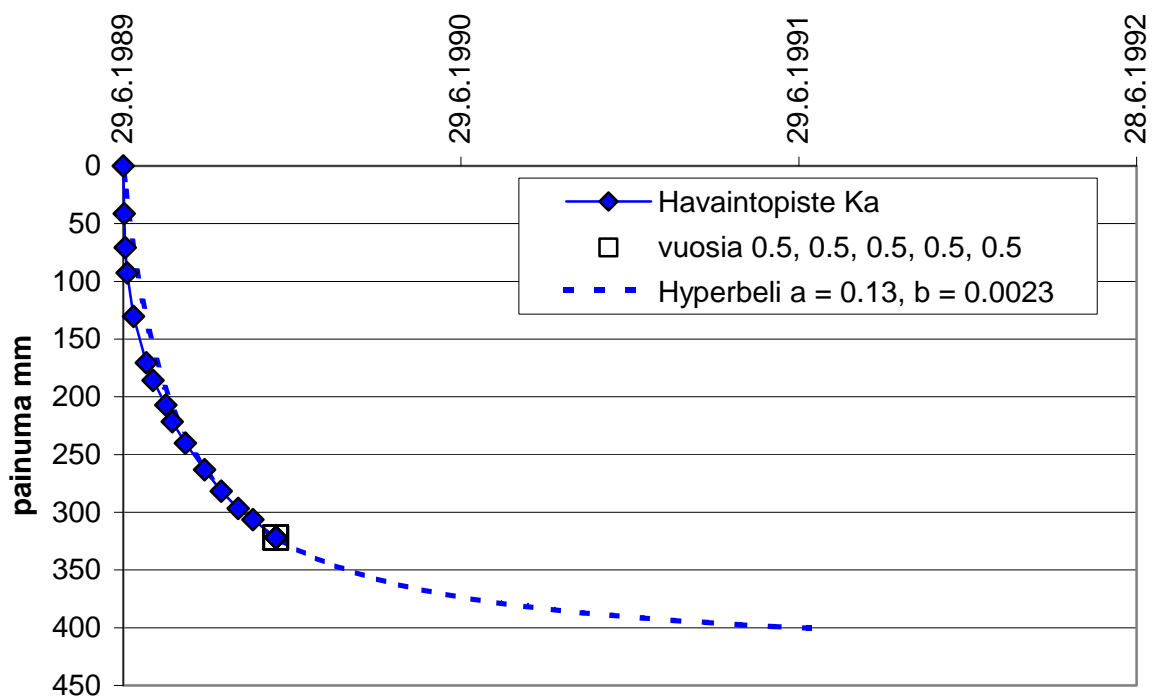
input

output

	a	b	Painuma		pain3	virh. mm
Hyperbeli	0.13	2.32E-03	431		410	ei havaint.



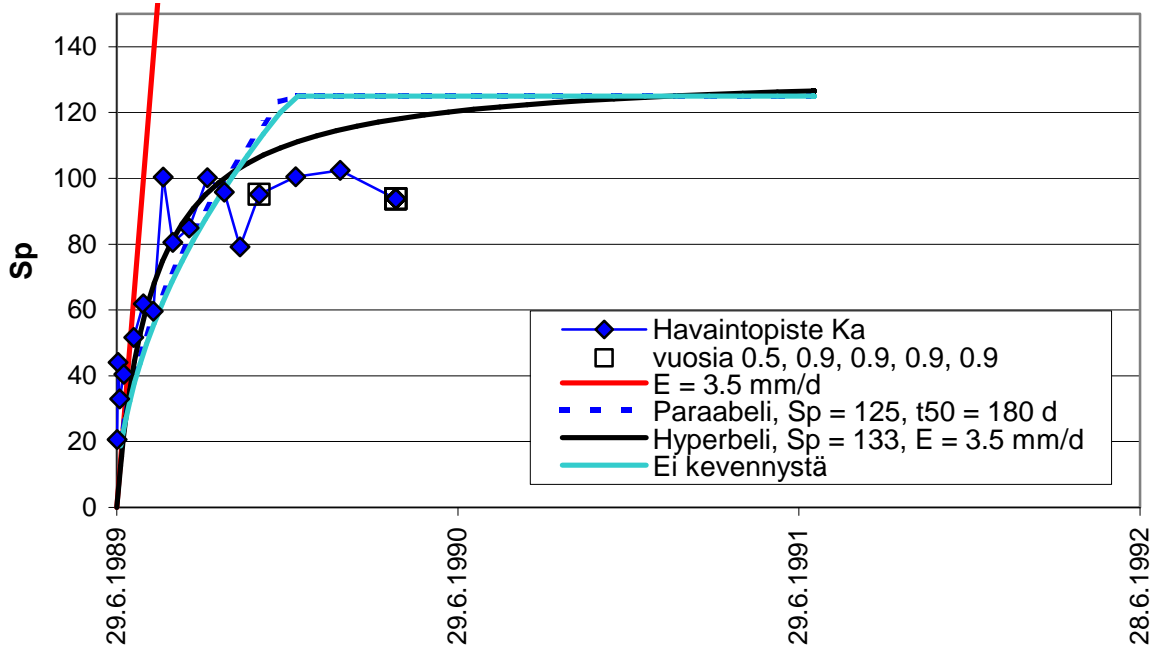
Aika-Painuma kuvaaja



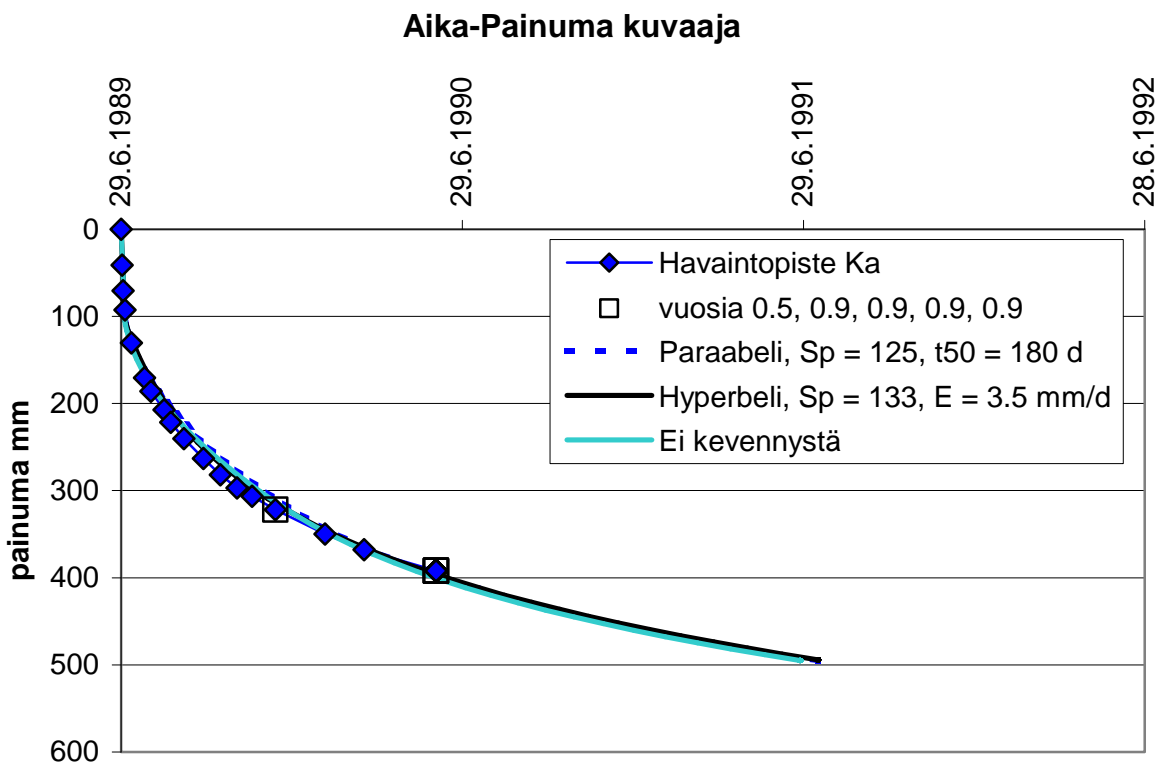
Koepenger, Vaasa, 1 v

Havaintopiste Ka

○ 1-puol. kl	H	w	m (b = 0)	m	alkupai.	t0 (d)	pain. t (a)	tod. t
● 2-puol. kl	15	90	6...10.1	7	105	4	3	3
input				80				
	Sp	t50/E	rs	B	c _v	pain. 3	virh. mm	
Paraabeli	125	180	120	0.058	22.4	543	ei havaint.	
Hyperbeli	133	3.50	113	0.062		543	ei havaint.	



Aika-Painumapotentiaali kuvaaja



Aika-Painuma kuvaaja



pain. t (a)

tod. t

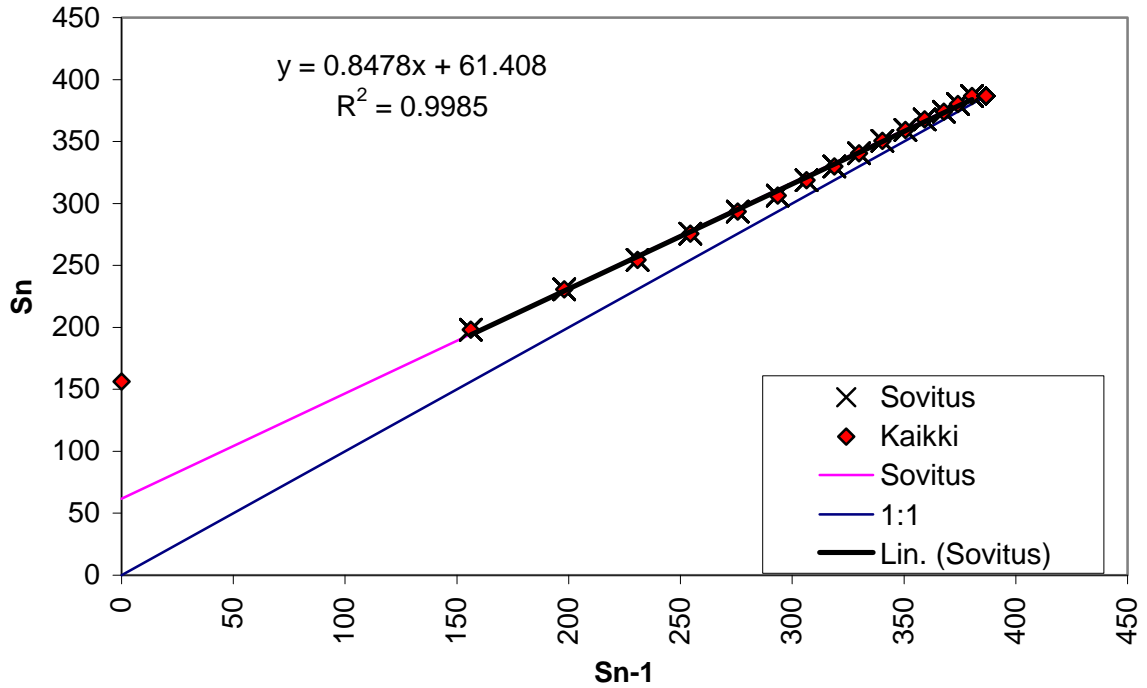
3

3

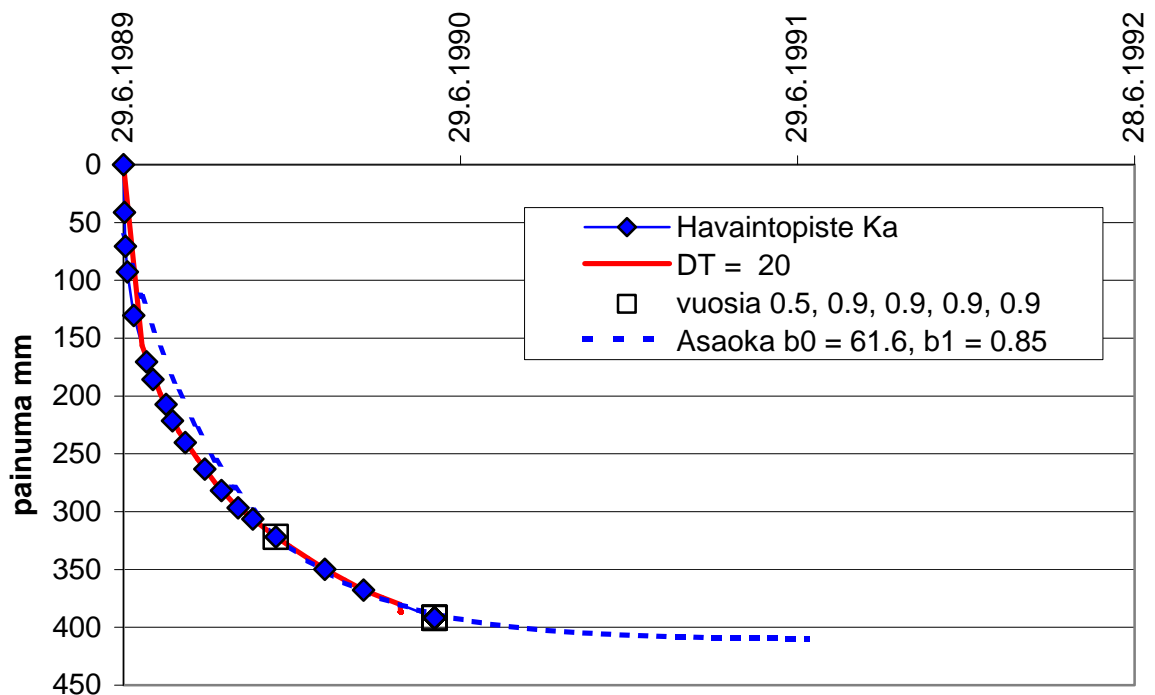
input

output

	β_0	β_1	t	Prim. Pain.	pain3	virh. mm
Asaoka	61.6	0.850	20.00	411	411	ei havaint.
	61.6	0.850	20.00			



Aika-Painuma kuvaaja



Koepenger, Vaasa, 1 v

Havaintopiste Ka



pain. t (a)

tod. t

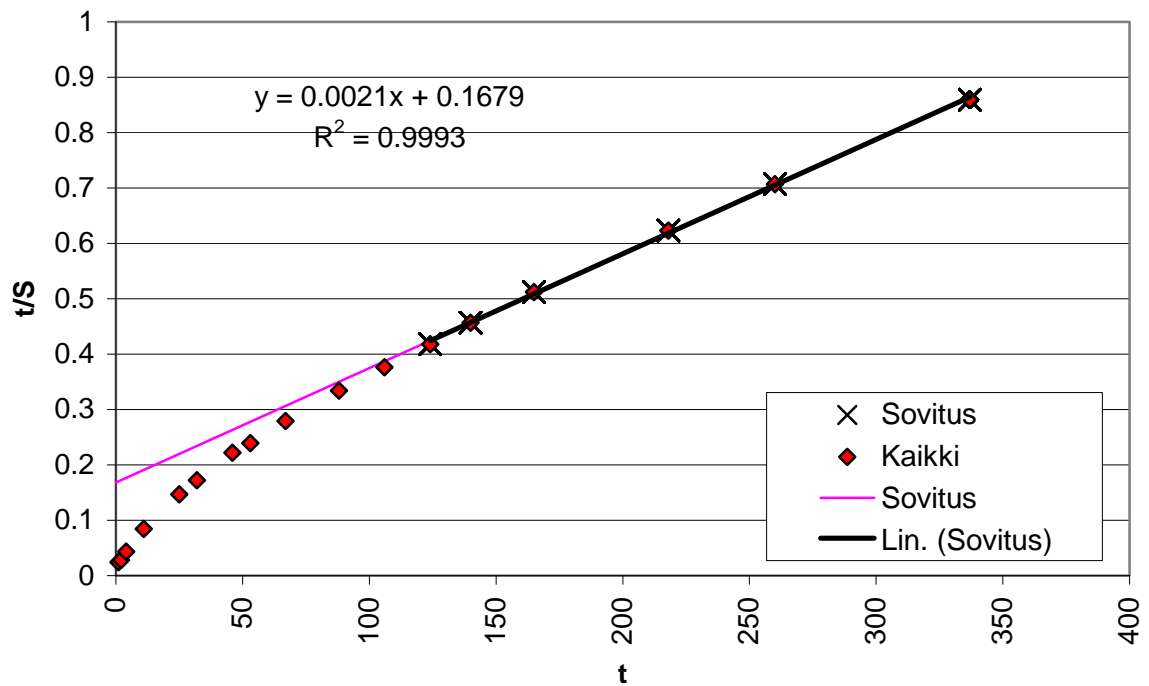
3

3

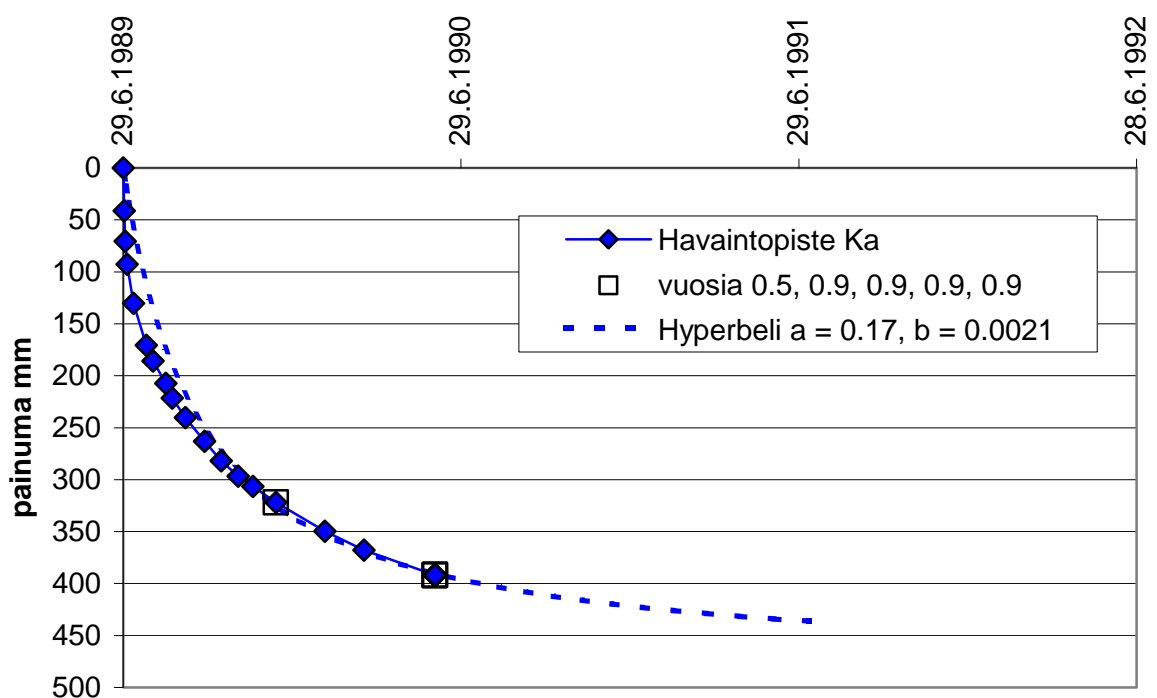
input

output

	a	b	Painuma		pain3	virh. mm
Hyperbeli	0.17	2.07E-03	484		451	ei havaint.



Aika-Painuma kuvaaja



Painumaennuste

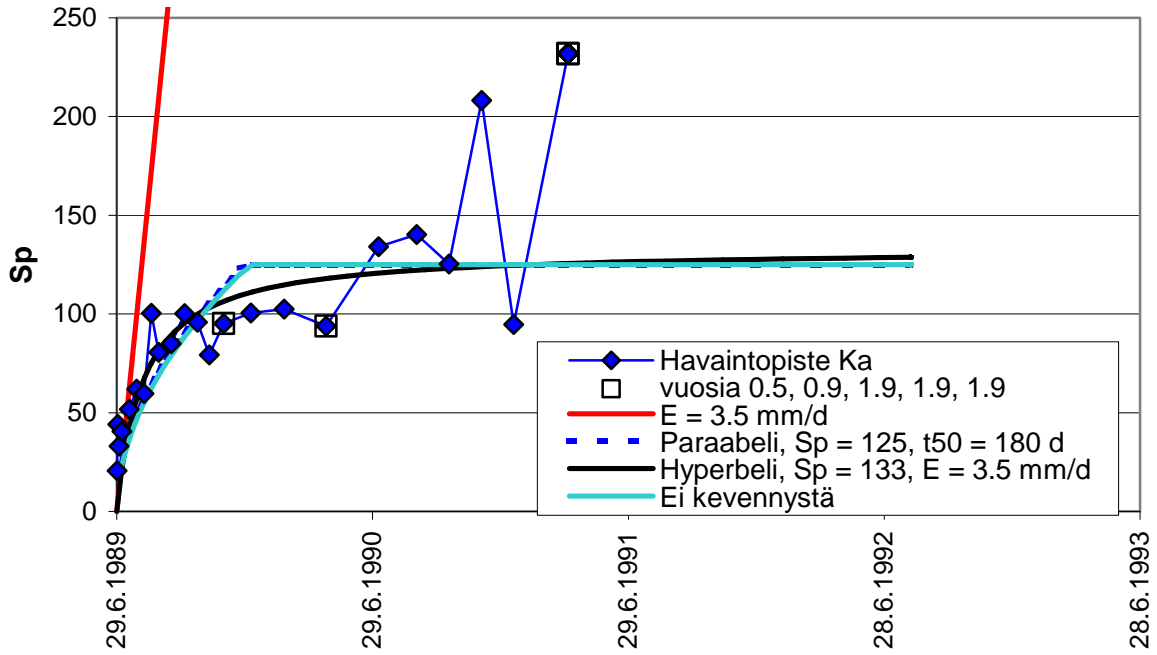
Painumapotentialiaali

LIITE IV / s. 7

Koepenger, Vaasa, 2 v

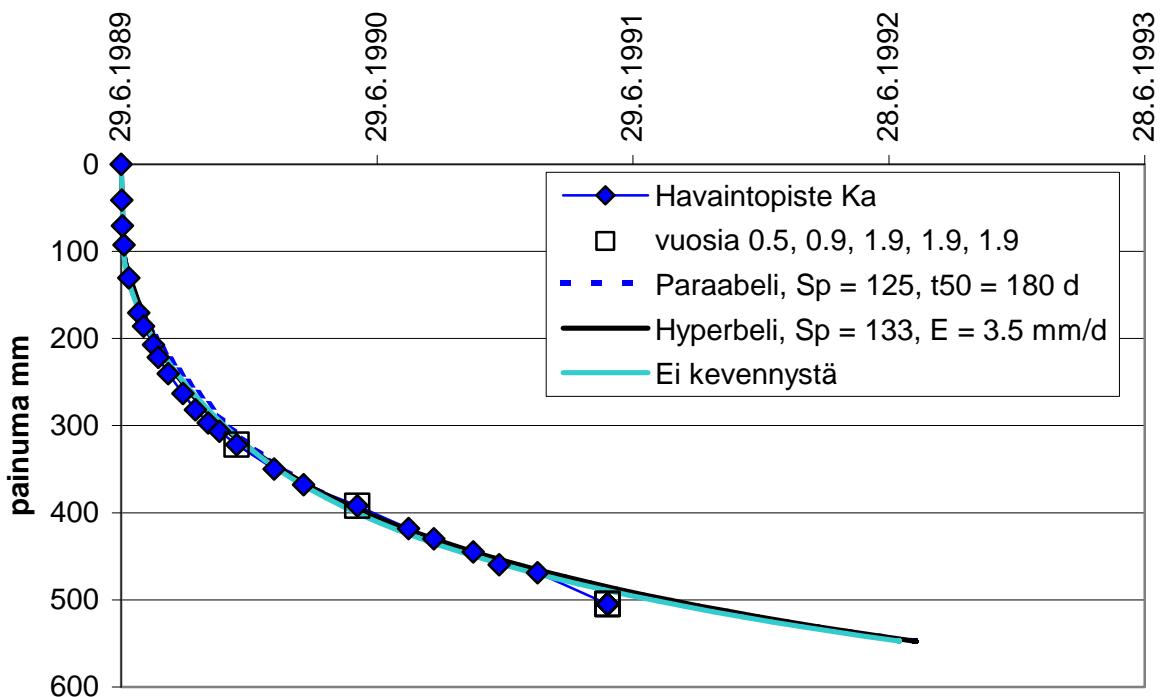
Havaintopiste Ka

○ 1-puol. kl	H	w	m (b = 0)	m	alkupai.	t0 (d)	pain. t (a)	tod. t
● 2-puol. kl	15	90	6...10.1	7	105	4	3	3
input					80			
	Sp	t50/E	rs	B	c _v	pain. 3	virh. mm	
Paraabeli	125	180	120	0.058	22.4	543	ei havaint.	
Hyperbeli	133	3.50	113	0.062		543	ei havaint.	



Aika-Painumapotentialiaali kuvaaja

Aika-Painuma kuvaaja





pain. t (a)

tod. t

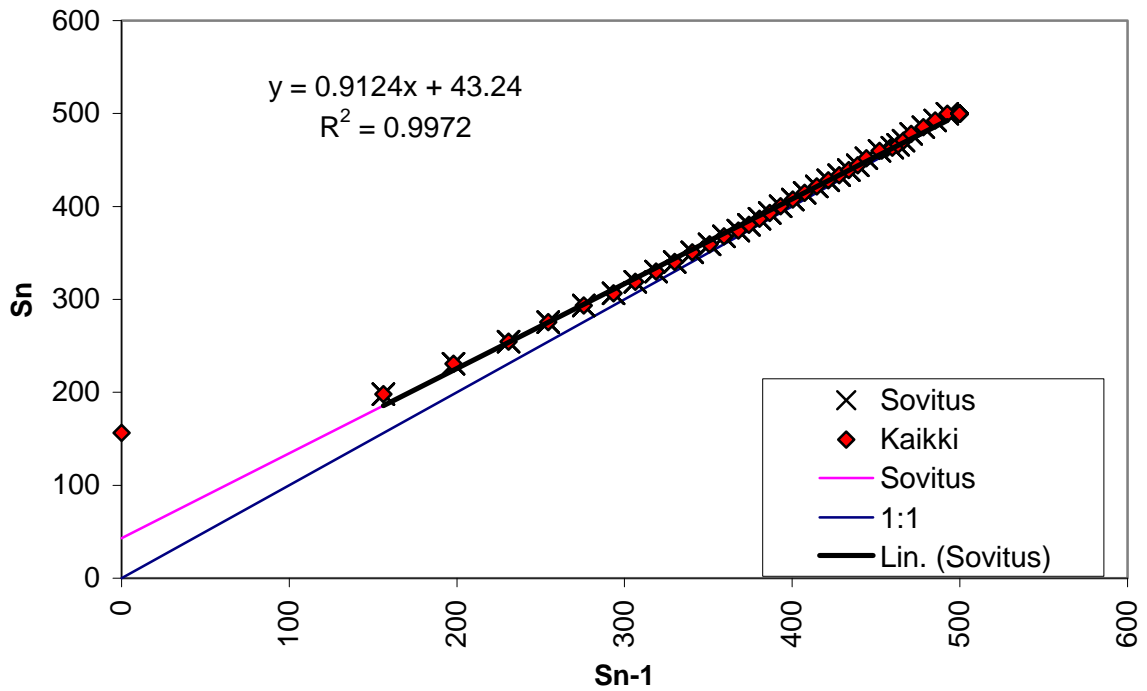
3

3

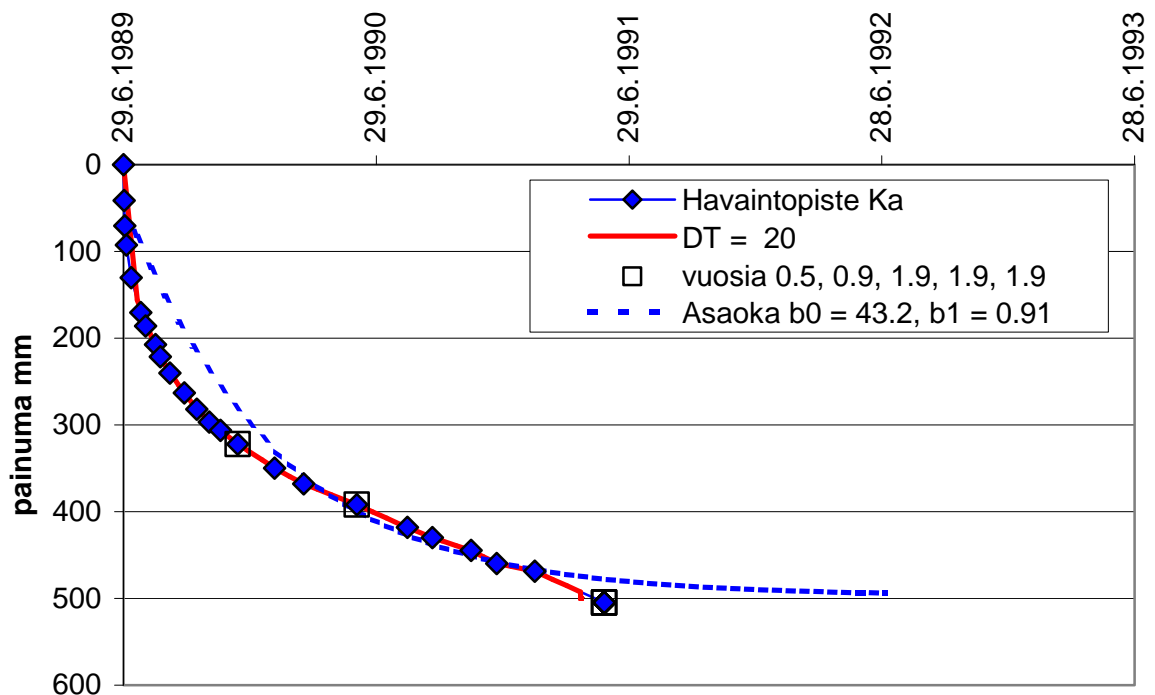
input

output

	β_0	β_1	t	Prim. Pain.	pain3	virh. mm
Asaoka	43.2	0.913	20.00	497	494	ei havaint.
	43.2	0.913	20.00			



Aika-Painuma kuvaaja





pain. t (a)

tod. t

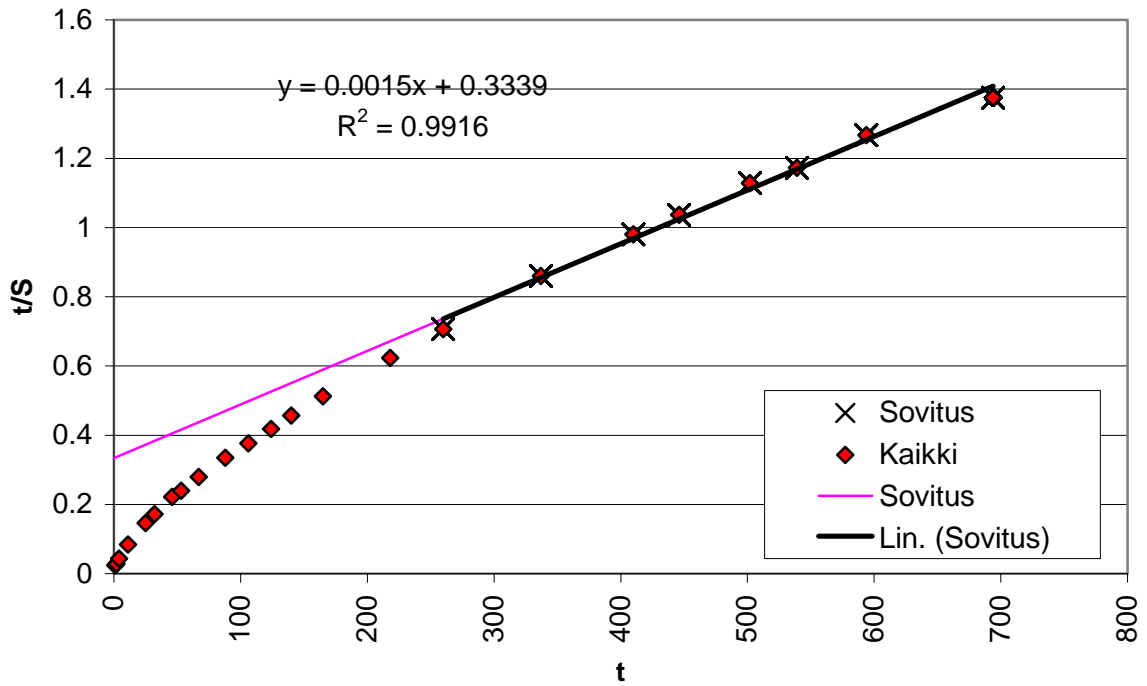
3

3

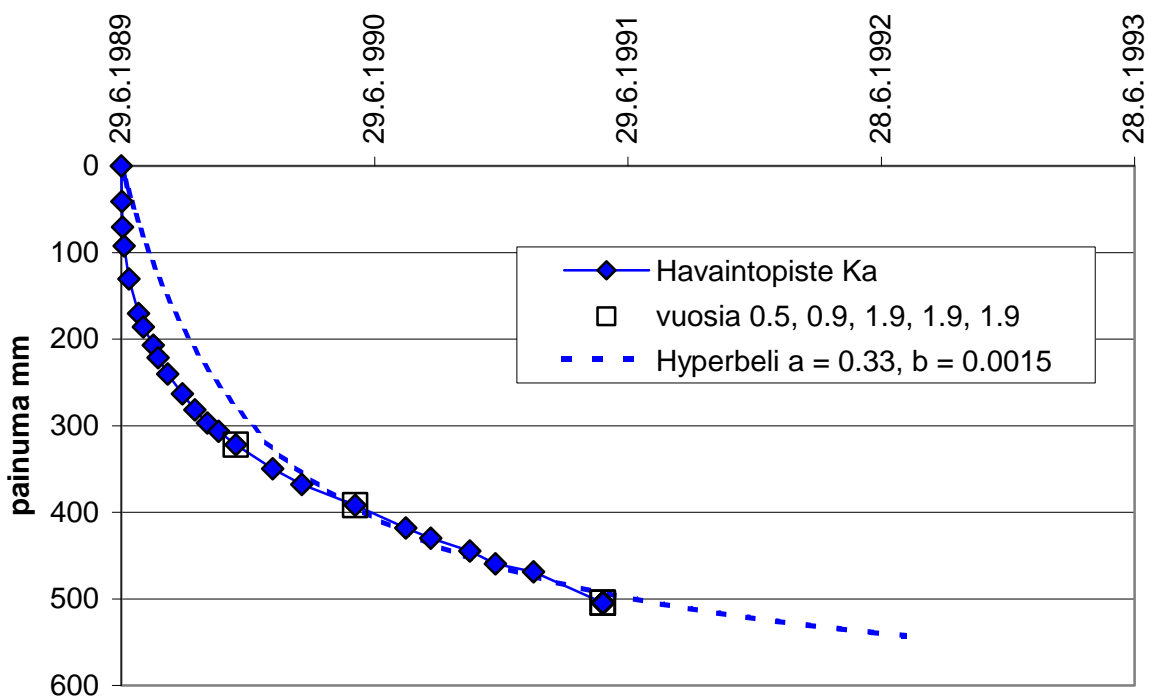
input

output

	a	b	Painuma	pain3	virh. mm
Hyperbeli	0.33	1.55E-03	646	540	ei havaint.



Aika-Painuma kuvaaja



Painumaennuste

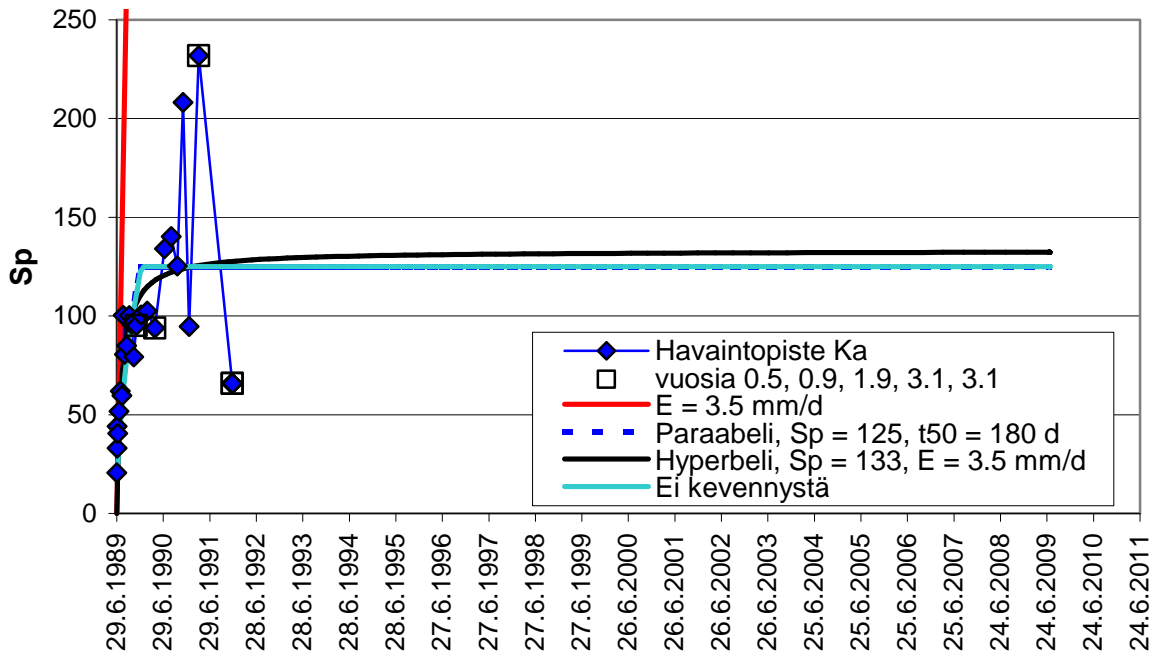
Painumapotentiaali

LIITE IV / s. 10

Koepenger, Vaasa, 2 v

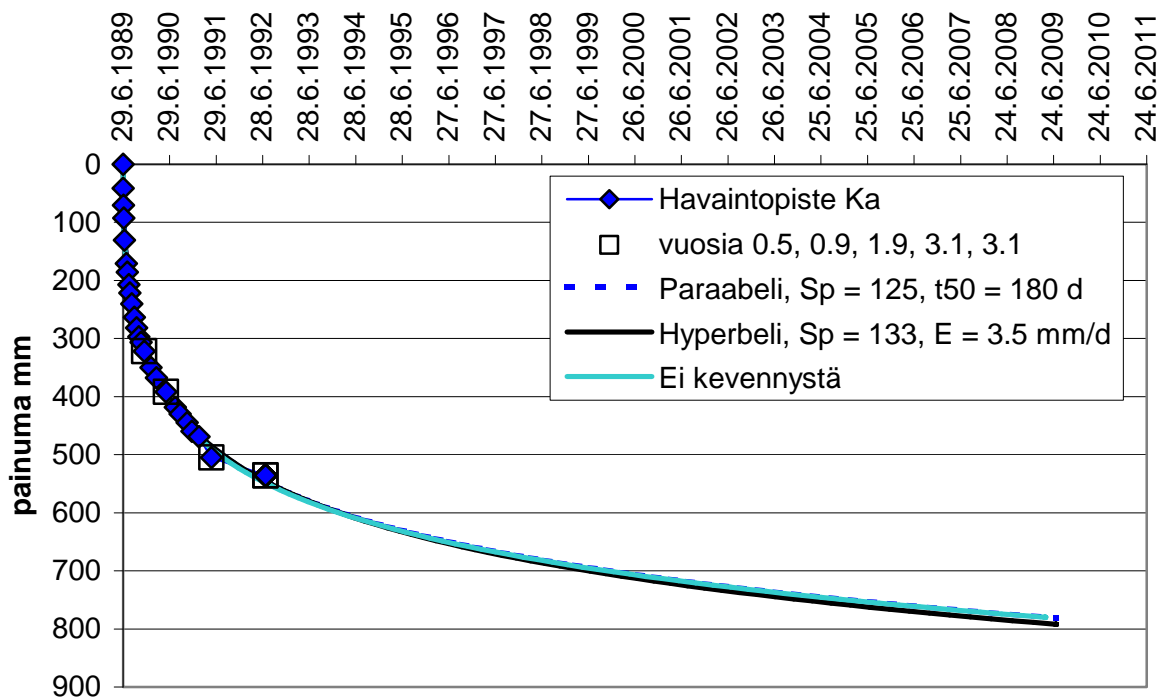
Havaintopiste Ka

○ 1-puol. kl	H	w	m (b = 0)	m	alkupai.	t0 (d)	pain. t (a)	tod. t
● 2-puol. kl	15	90	6...10.1	7	105	4	20	20
input				80				
	Sp	t50/E	rs	B	c _v	pain. 20	virh. mm	
Paraabeli	125	180	120	0.058	22.4	781	ei havaint.	
Hyperbeli	133	3.50	113	0.062		792	ei havaint.	



Aika-Painumapotentiaali kuvaaja

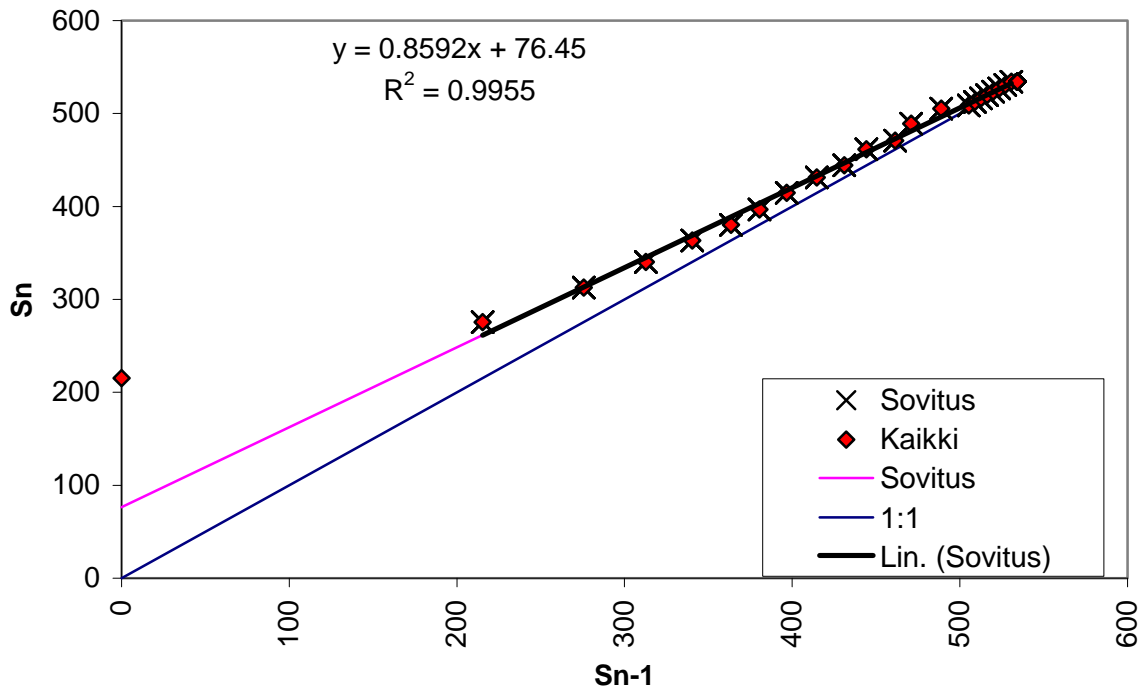
Aika-Painuma kuvaaja



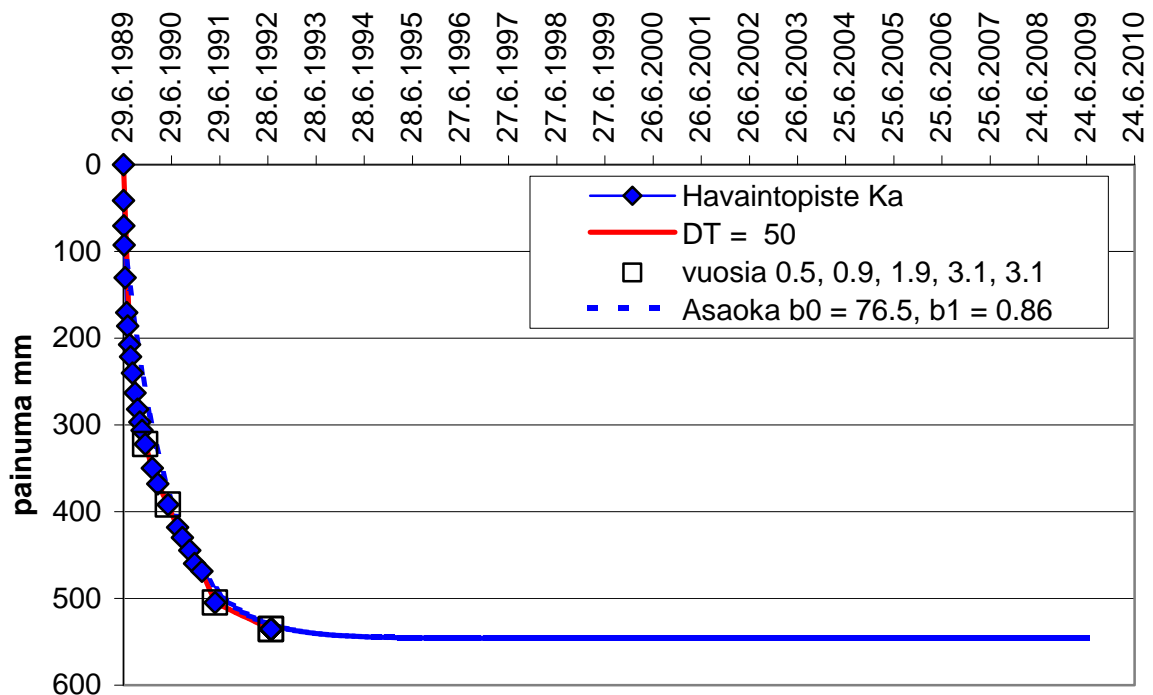


pain. t (a)	tod. t
20	20

input				output			
	β_0	β_1	t	Prim. Pain.		pain20	virh. mm
Asaoka	76.5	0.860	50.00	546		546	ei havaint.
	76.5	0.860	50.00				



Aika-Painuma kuvaaja





pain. t (a)

tod. t

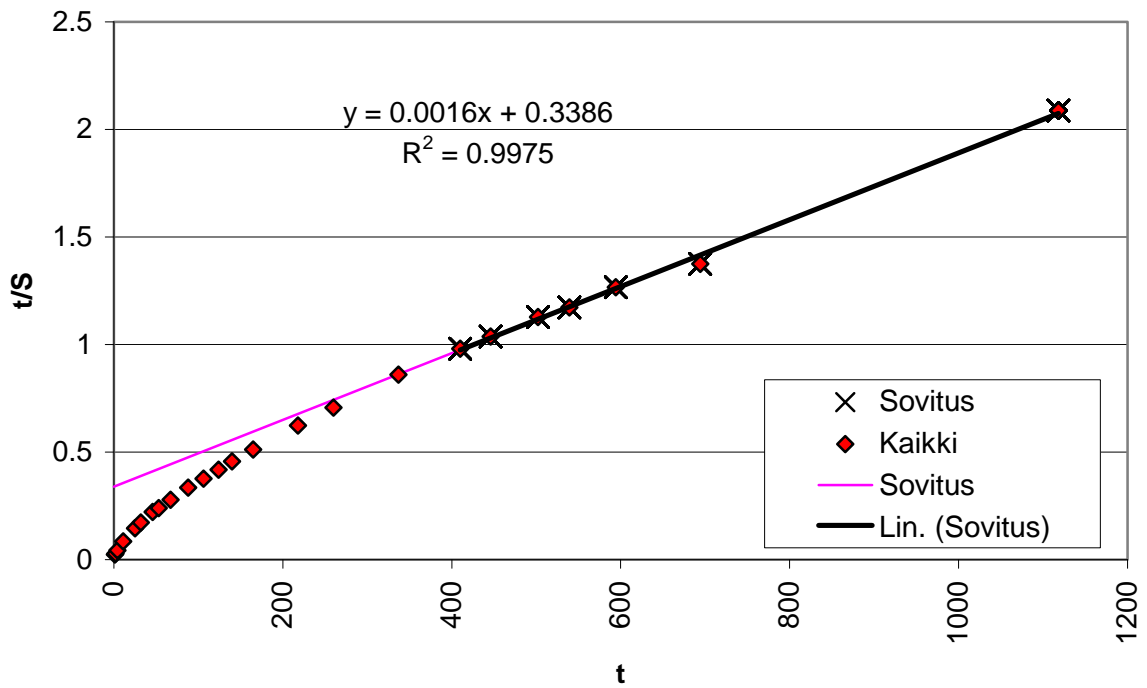
20

20

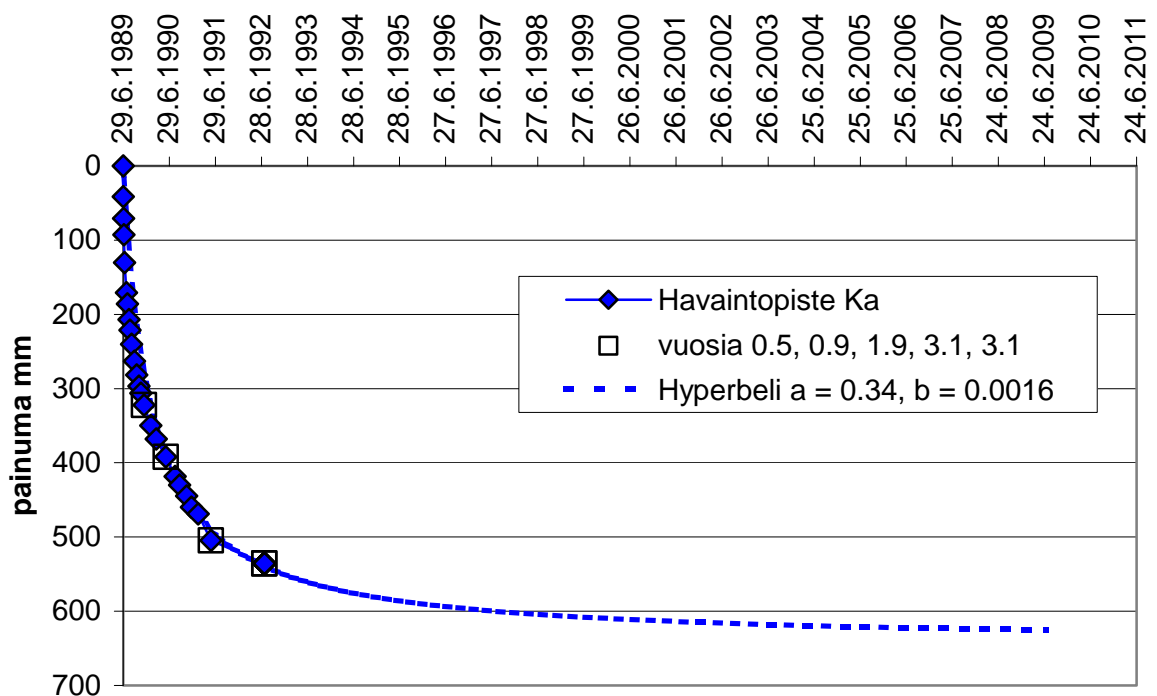
input

output

	a	b	Painuma		pain20	virh. mm
Hyperbeli	0.34	1.55E-03	644		626	ei havaint.



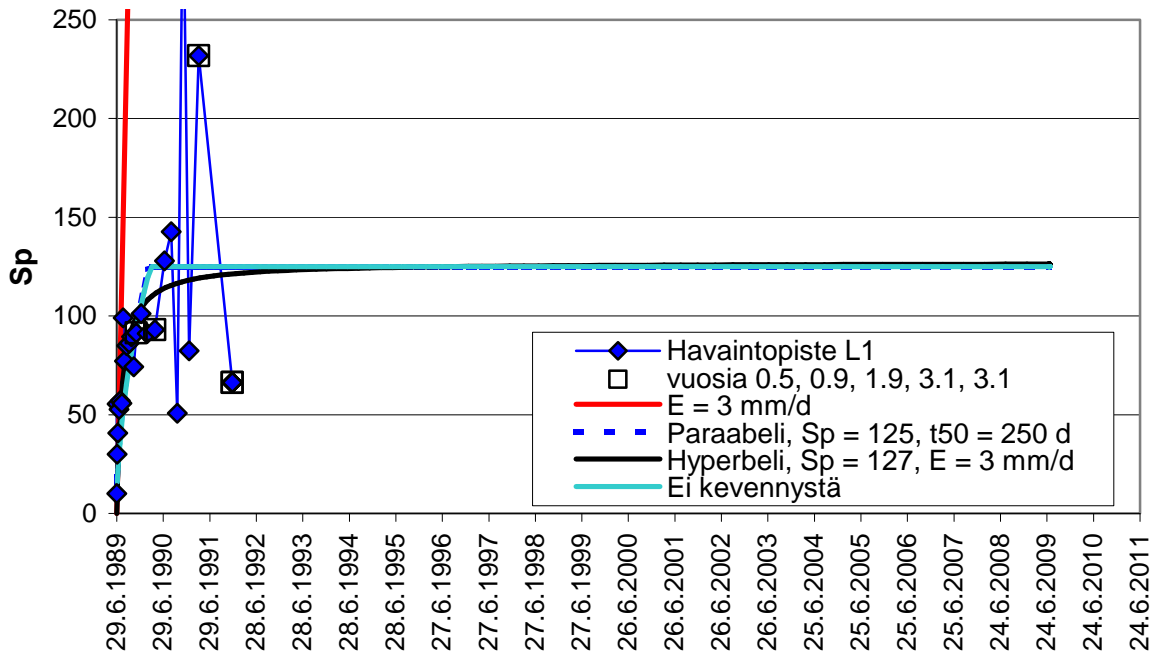
Aika-Painuma kuvaaja



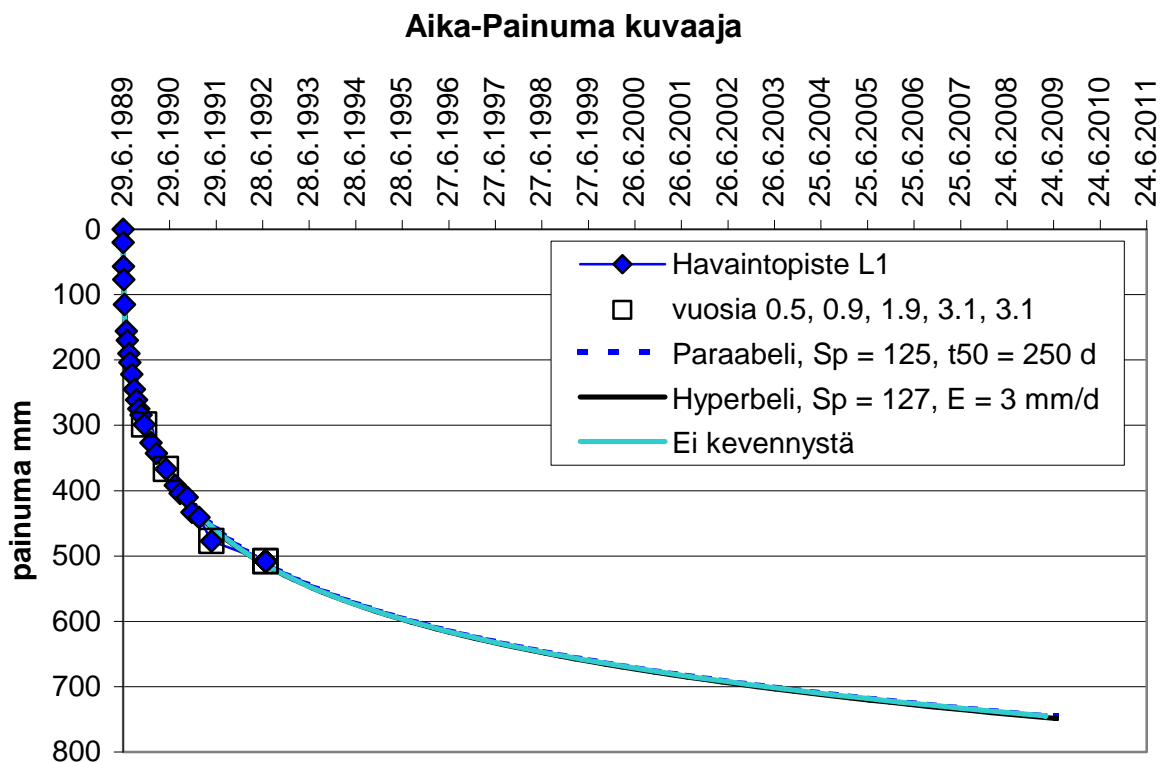
Koepenger, Vaasa, 3,5 v

Havaintopiste L1

○ 1-puol. kl	H	w	m (b = 0)	m	alkupai.	t0 (d)	pain. t (a)	tod. t
● 2-puol. kl	15	90	6...10.1	7	105	4	20	20
input				80				
	Sp	t50/E	rs	B	c _v	pain. 20	virh. mm	
Paraabeli	125	250	120	0.058	16.1	745	ei havaint.	
Hyperbeli	127	3.00	118	0.059		748	ei havaint.	



Aika-Painumapotentiaali kuvaaja



Aika-Painuma kuvaaja



pain. t (a)

20

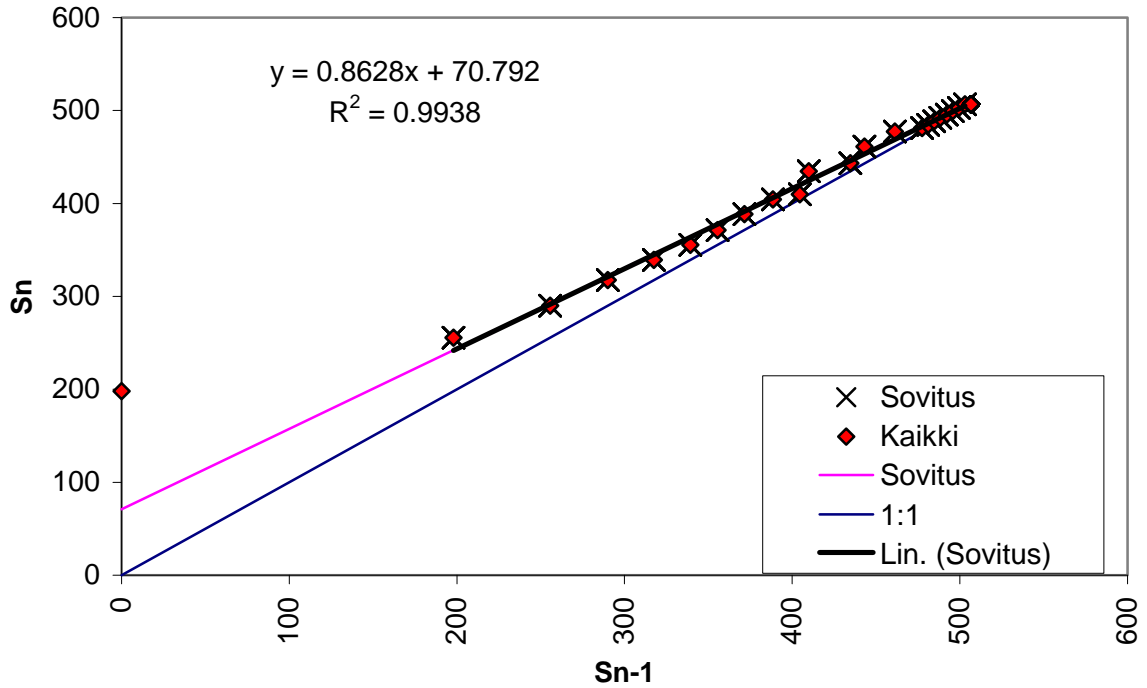
tod. t

20

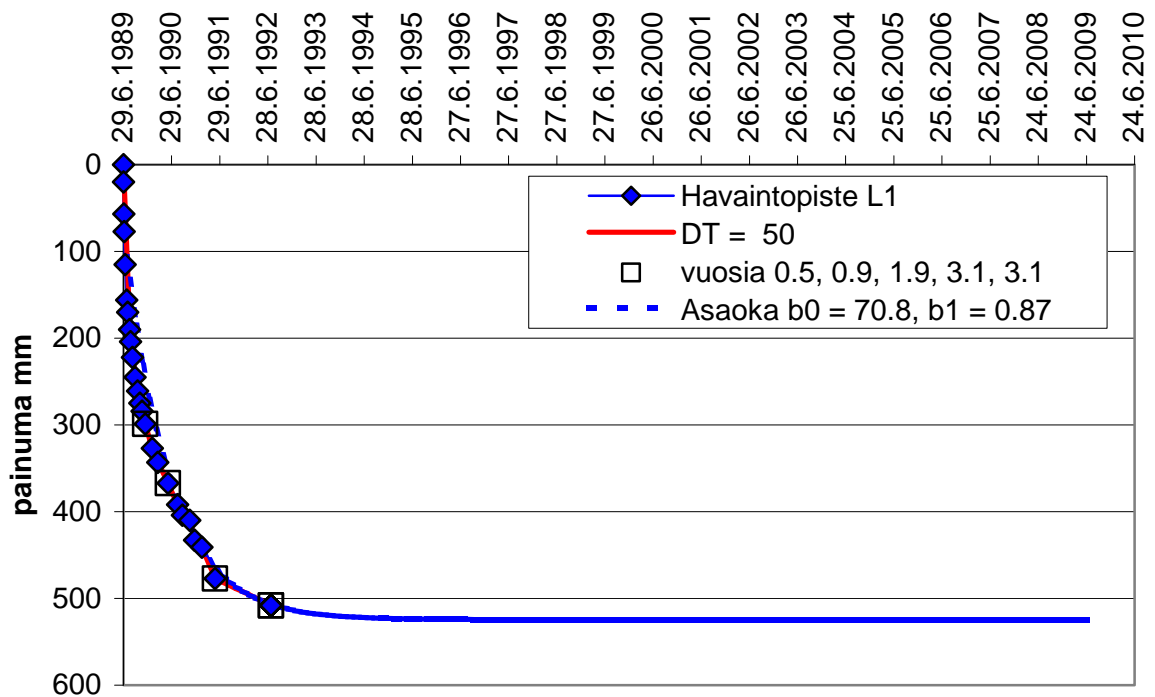
input

output

	β_0	β_1	t	Prim. Pain.	pain20	virh. mm
Asaoka	70.8	0.865	50.00	524	524	ei havaint.
	70.8	0.865	50.00			



Aika-Painuma kuvaaja





pain. t (a)

tod. t

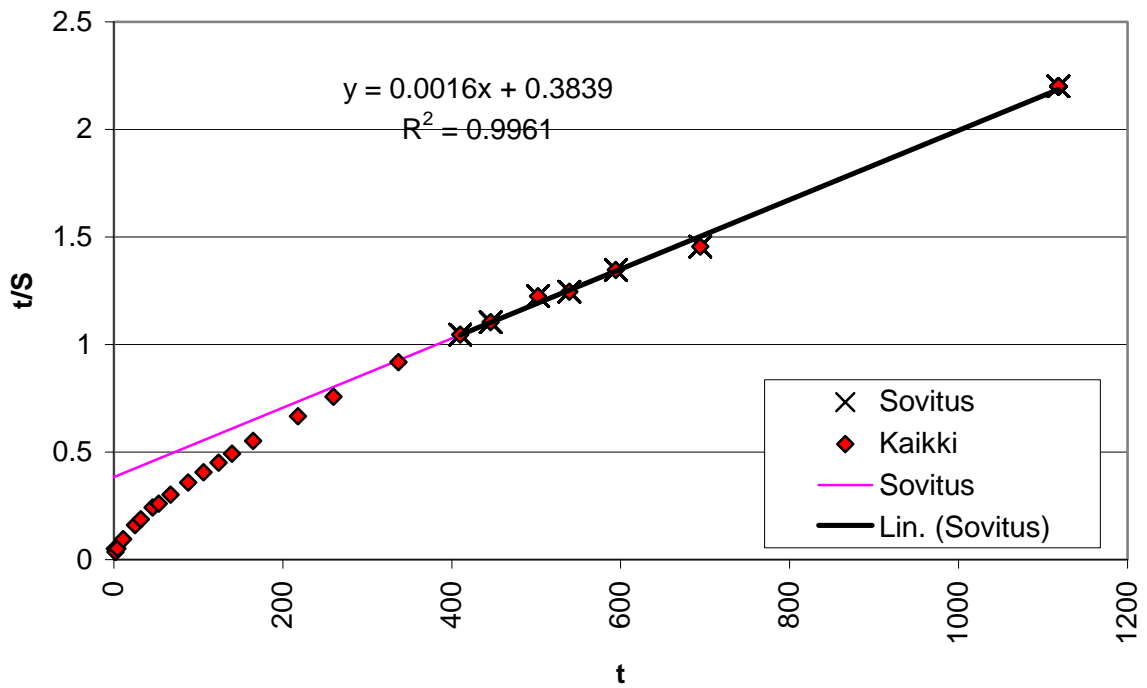
20

20

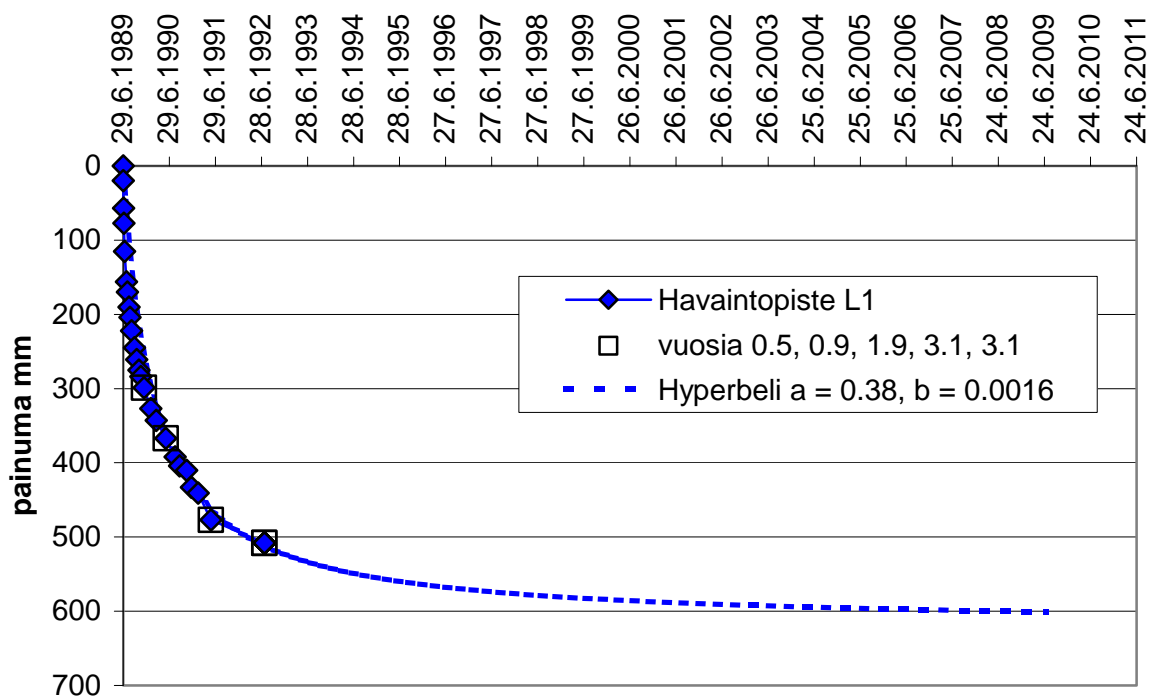
input

output

	a	b	Painuma		pain20	virh. mm
Hyperbeli	0.38	1.61E-03	620		601	ei havaint.



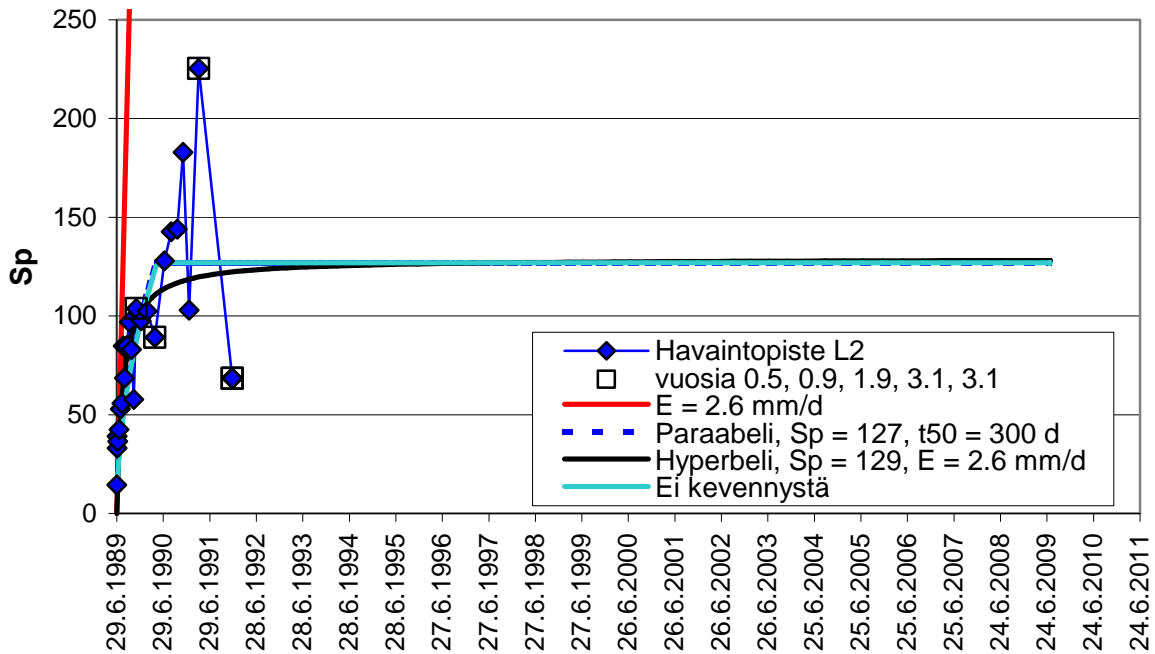
Aika-Painuma kuvaaja



Koepenger, Vaasa, 3,5 v

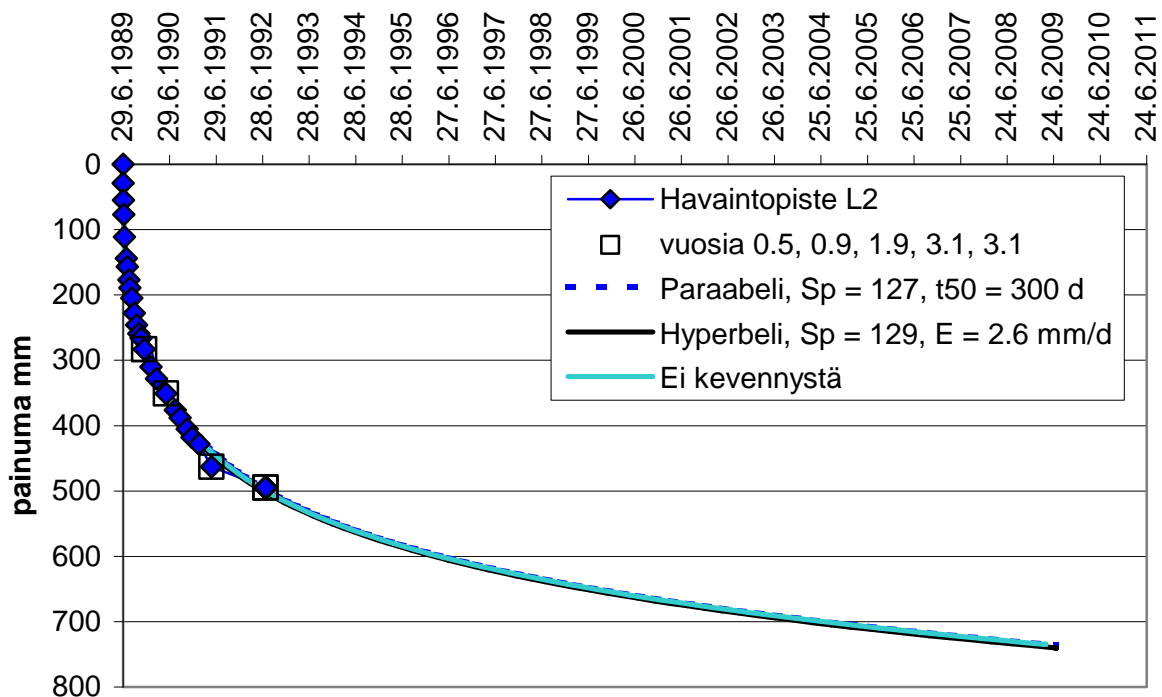
Havaintopiste L2

○ 1-puol. kl	H	w	m (b = 0)	m	alkupai.	t0 (d)	pain. t (a)	tod. t
● 2-puol. kl	15	90	6...10.1	7	105	4	20	20
input				80				
	Sp	t50/E	rs	B	c _v	pain. 20	virh. mm	
Paraabeli	127	300	118	0.059	13.4	735	ei havaint.	
Hyperbeli	129	2.60	116	0.060		740	ei havaint.	



Aika-Painumapotentialiaali kuvaaja

Aika-Painuma kuvaaja





pain. t (a)

20

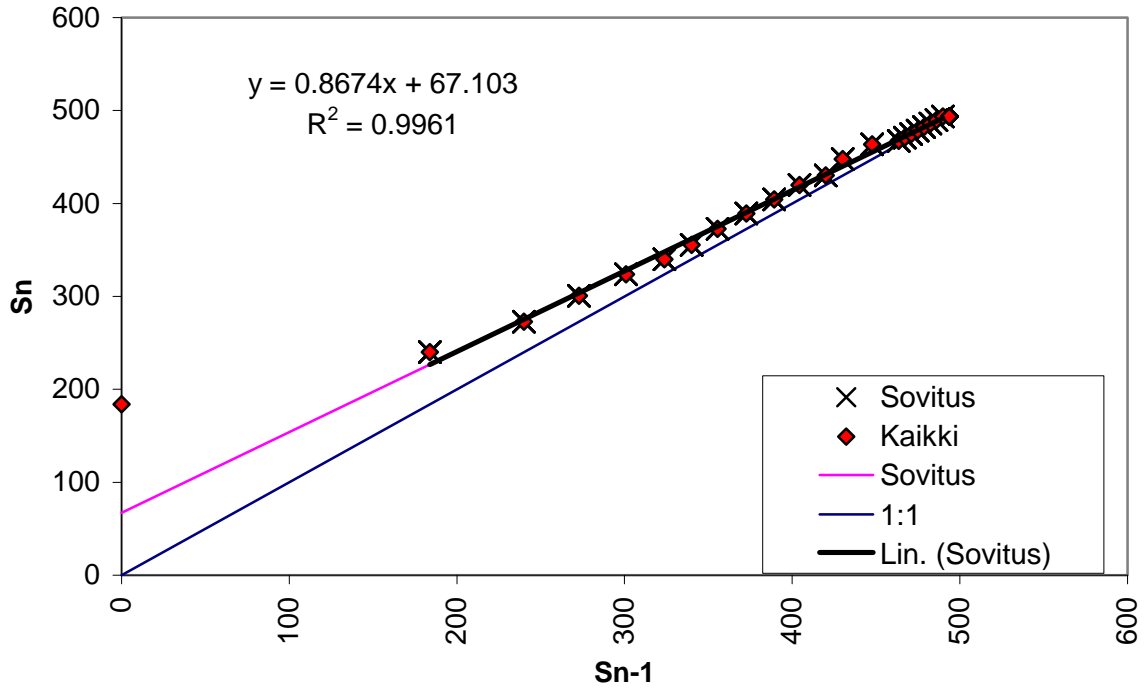
tod. t

20

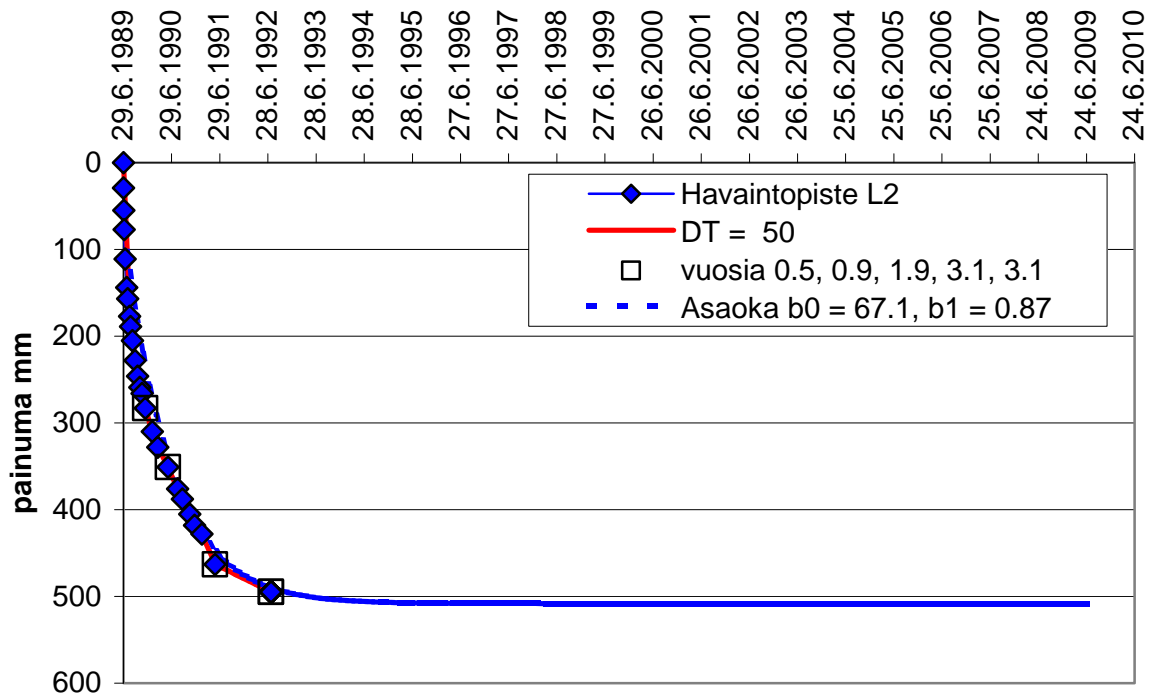
input

output

	β_0	β_1	t	Prim. Pain.	pain20	virh. mm
Asaoka	67.1	0.868	50.00	508	508	ei havaint.
	67.1	0.868	50.00			



Aika-Painuma kuvaaja





pain. t (a)

tod. t

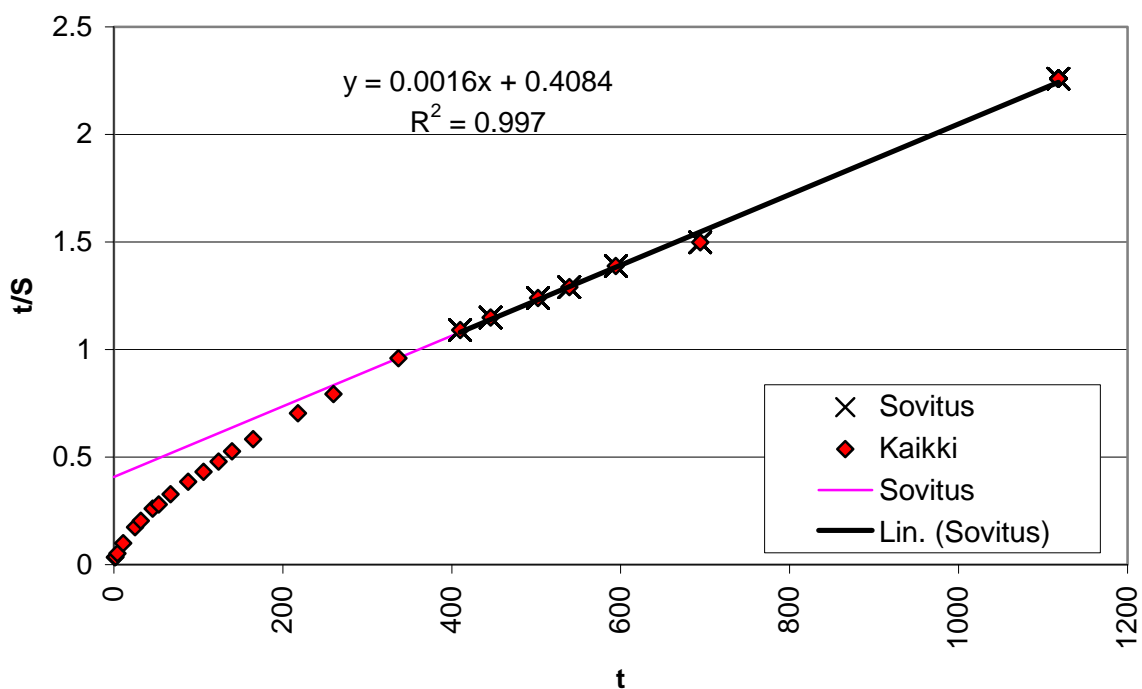
20

20

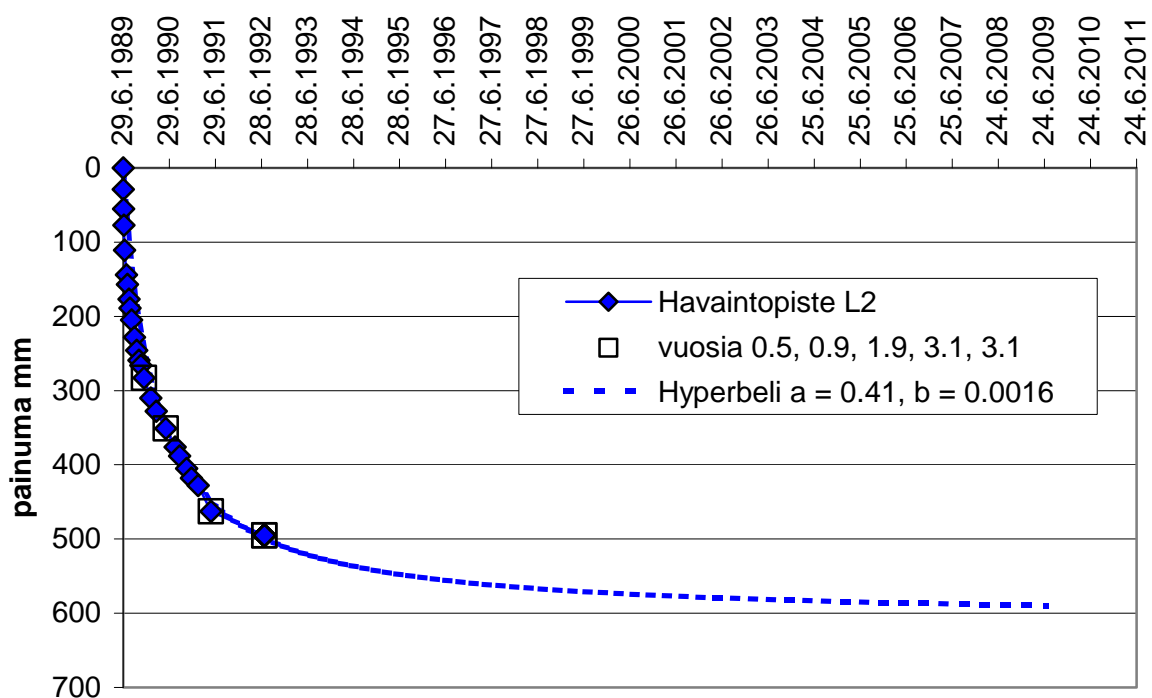
input

output

	a	b	Painuma	pain20	virh. mm
Hyperbeli	0.41	1.64E-03	610	590	ei havaint.



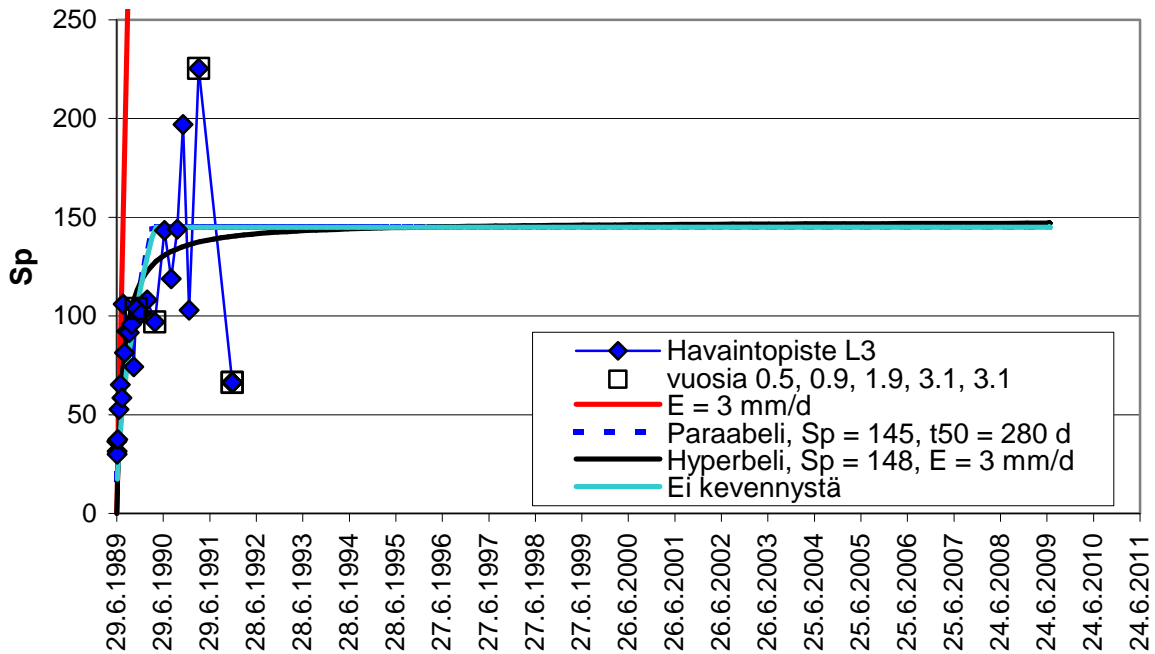
Aika-Painuma kuvaaja



Koepenger, Vaasa, 3,5 v

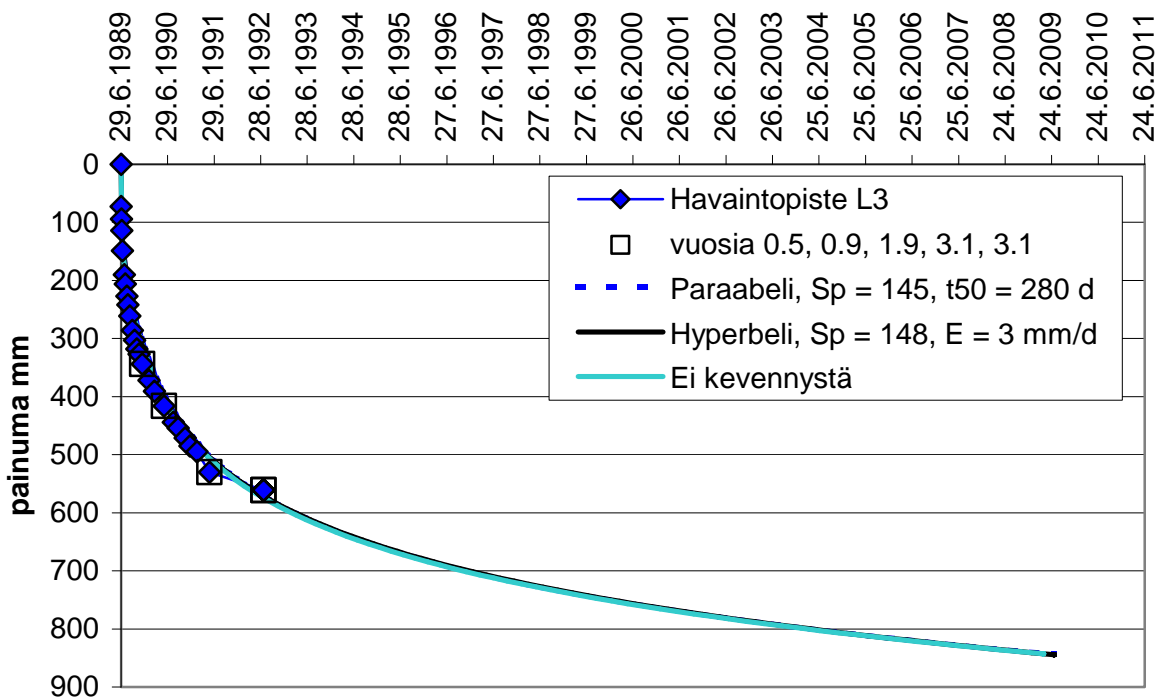
Havaintopiste L3

○ 1-puol. kl	H	w	m (b = 0)	m	alkupai.	t0 (d)	pain. t (a)	tod. t
● 2-puol. kl	15	90	6...10.1	7	115	4	20	20
input				80				
	Sp	t50/E	rs	B	c _v	pain. 20	virh. mm	
Paraabeli	145	280	103	0.068	14.4	843	ei havaint.	
Hyperbeli	148	3.00	101	0.069		844	ei havaint.	



Aika-Painumapotentialiaali kuvaaja

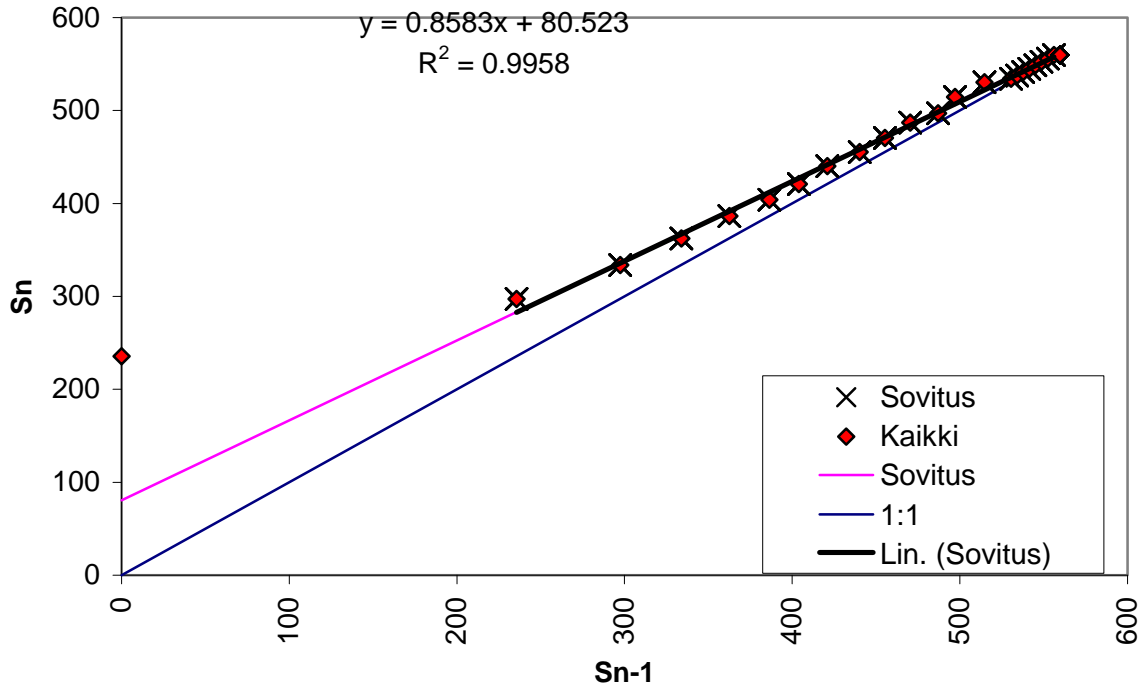
Aika-Painuma kuvaaja



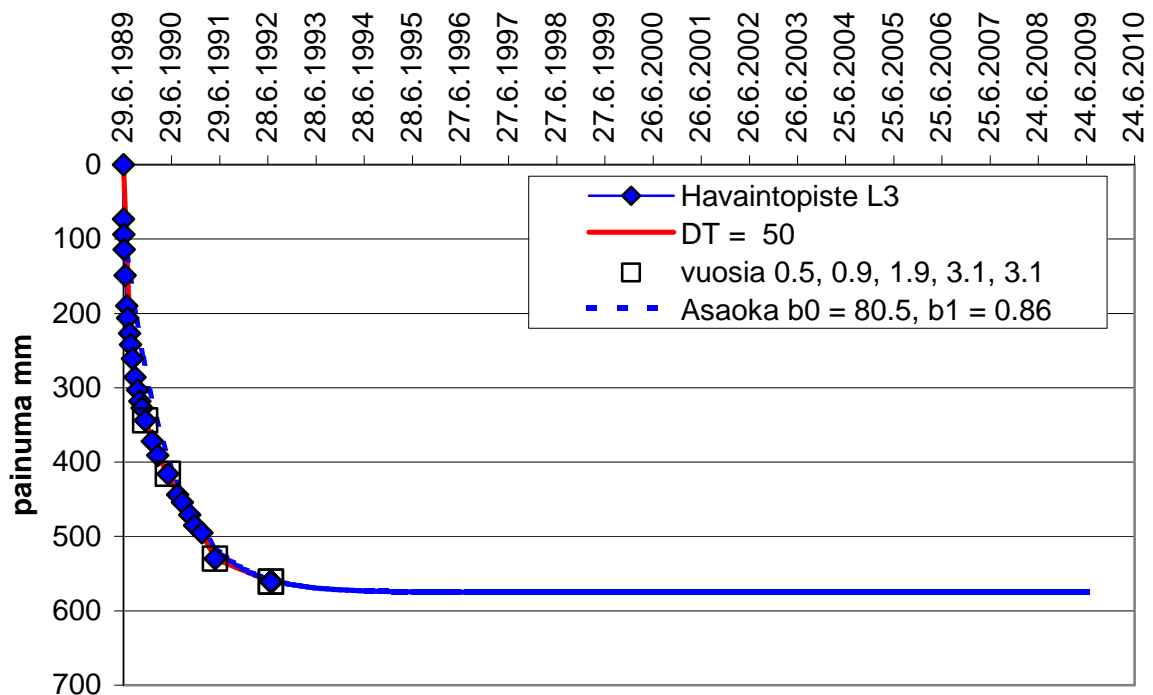


pain. t (a)	tod. t
20	20

input				output			
	β_0	β_1	t	Prim. Pain.		pain20	virh. mm
Asaoka	80.5	0.860	50.00	575		575	ei havaint.
	80.5	0.860	50.00				



Aika-Painuma kuvaaja





pain. t (a)

tod. t

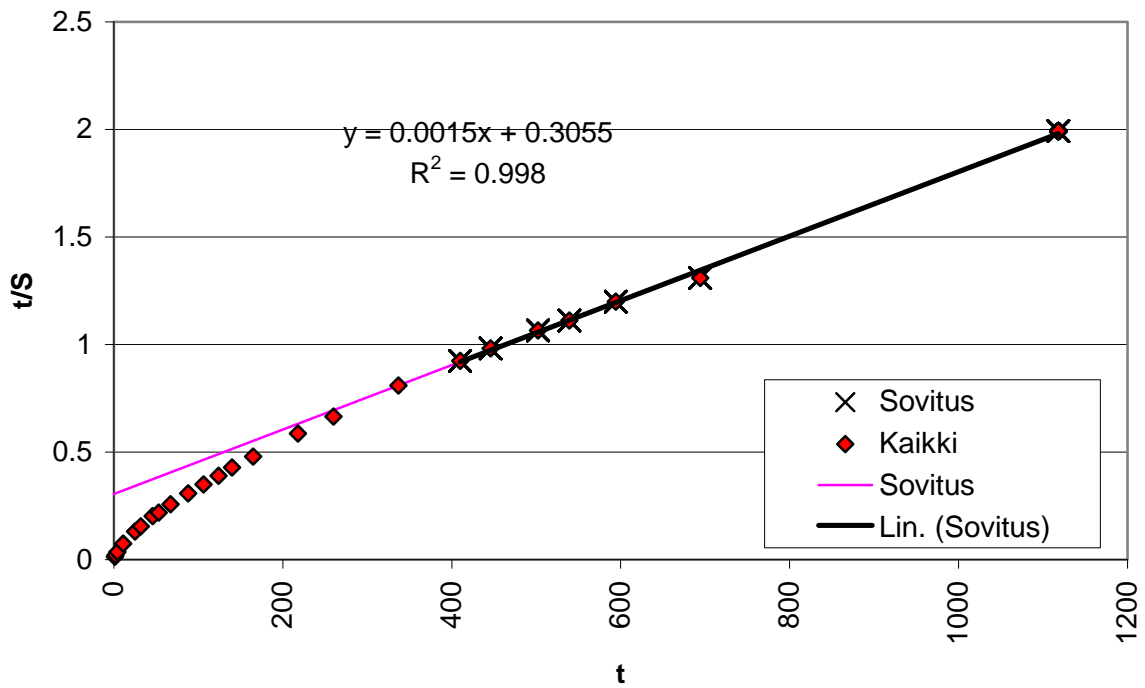
20

20

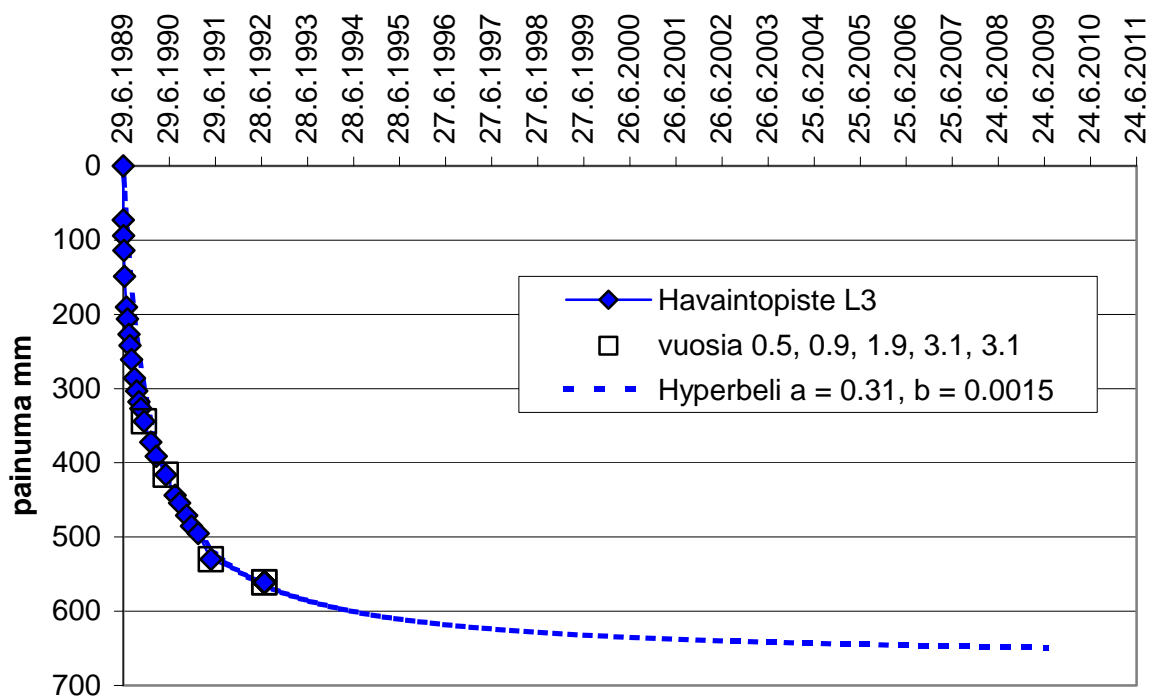
input

output

	a	b	Painuma	pain20	virh. mm
Hyperbeli	0.31	1.50E-03	667	649	ei havaint.



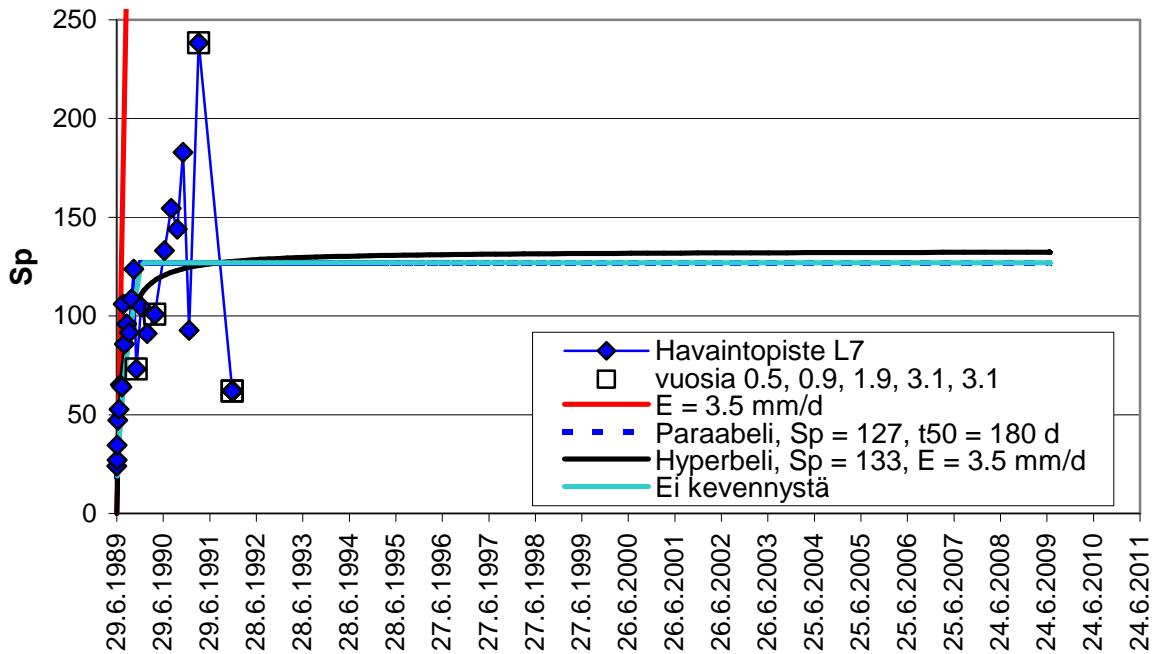
Aika-Painuma kuvaaja



Koepenger, Vaasa, 3,5 v

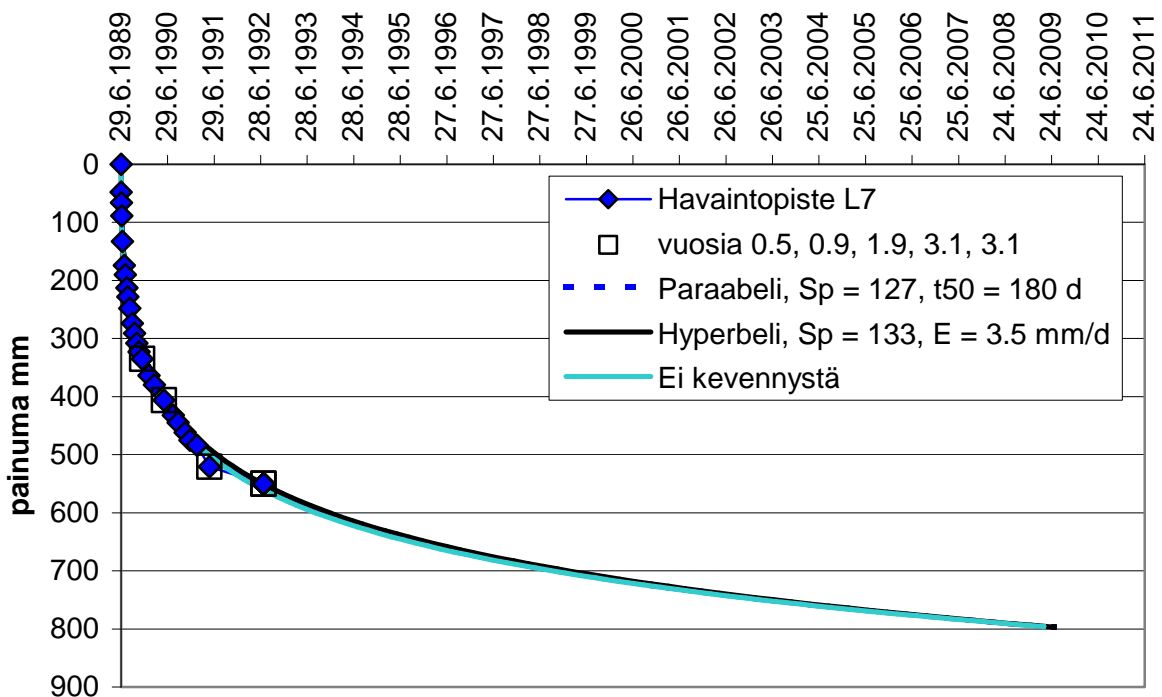
Havaintopiste L7

○ 1-puol. kl	H	w	m (b = 0)	m	alkupai.	t0 (d)	pain. t (a)	tod. t
● 2-puol. kl	15	90	6...10.1	7	110	4	20	20
input				80				
	Sp	t50/E	rs	B	c _v	pain. 20	virh. mm	
Paraabeli	127	180	118	0.059	22.4	796	ei havaint.	
Hyperbeli	133	3.50	113	0.062		797	ei havaint.	



Aika-Painumapotentiaali kuvaaja

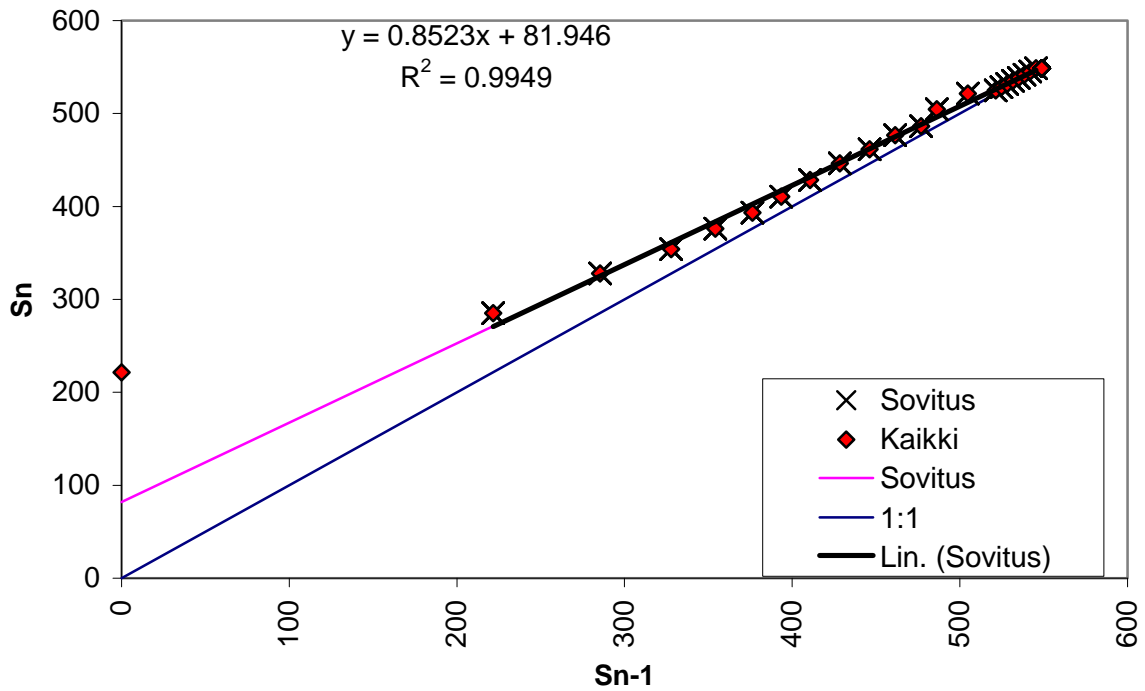
Aika-Painuma kuvaaja



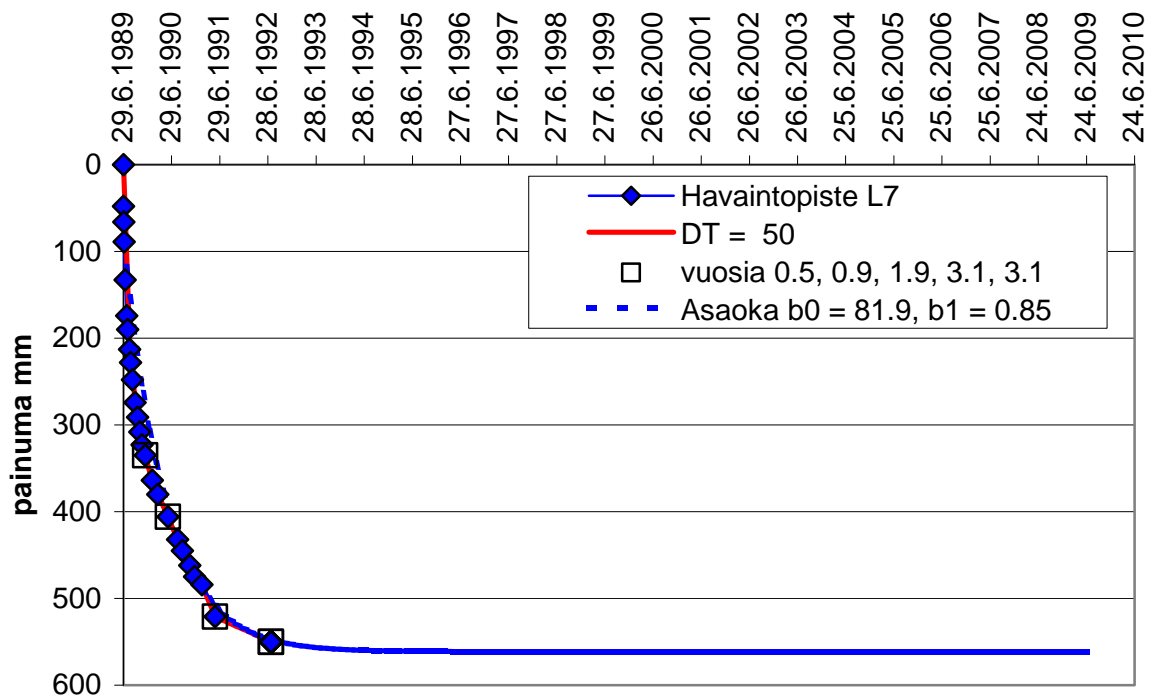


pain. t (a)	tod. t
20	20

input				output			
	β_0	β_1	t	Prim. Pain.		pain20	virh. mm
Asaoka	81.9	0.854	50.00	561		561	ei havaint.
	81.9	0.854	50.00				



Aika-Painuma kuvaaja





pain. t (a)

tod. t

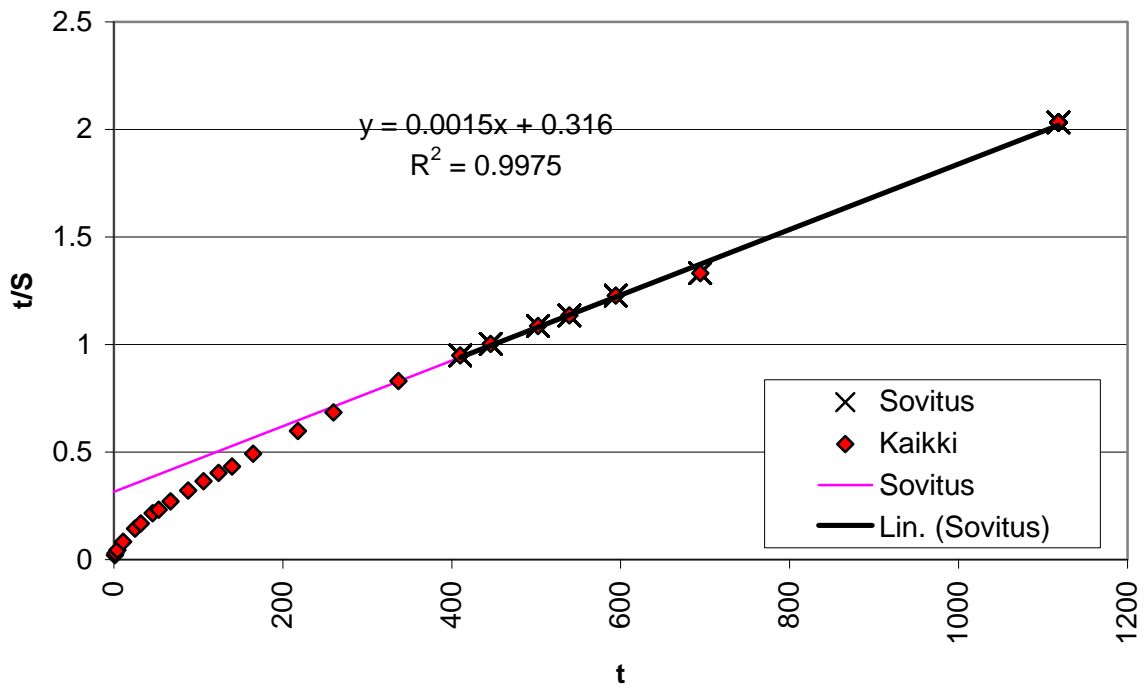
20

20

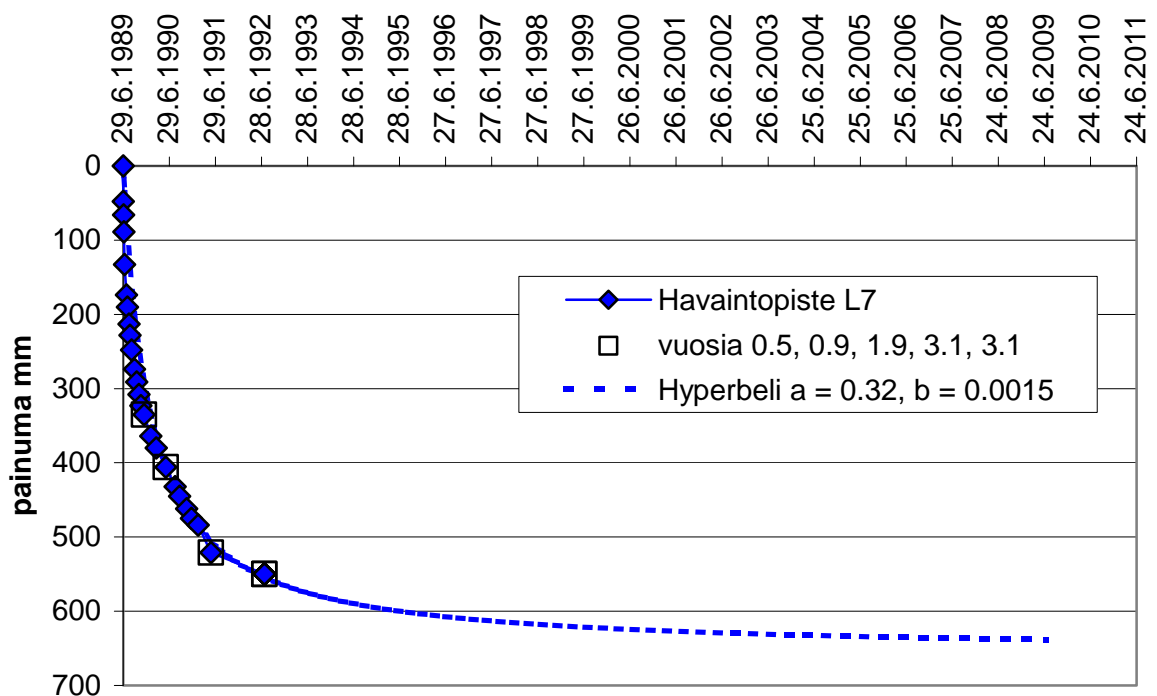
input

output

	a	b	Painuma		pain20	virh. mm
Hyperbeli	0.32	1.52E-03	657		638	ei havaint.



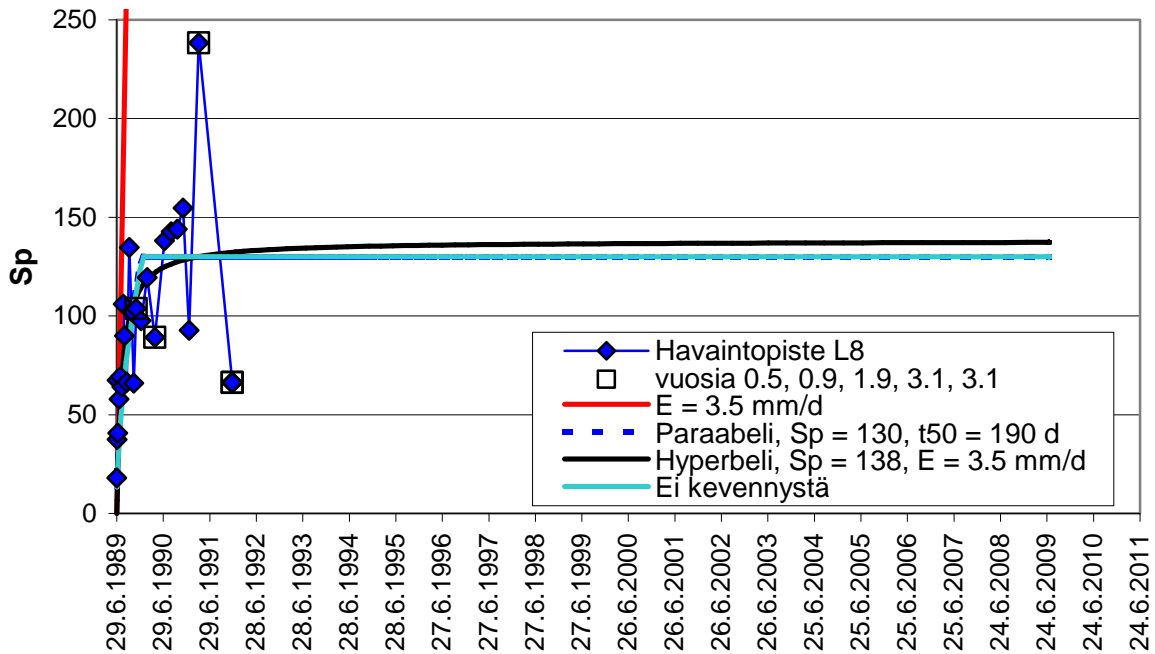
Aika-Painuma kuvaaja



Koepenger, Vaasa, 3,5 v

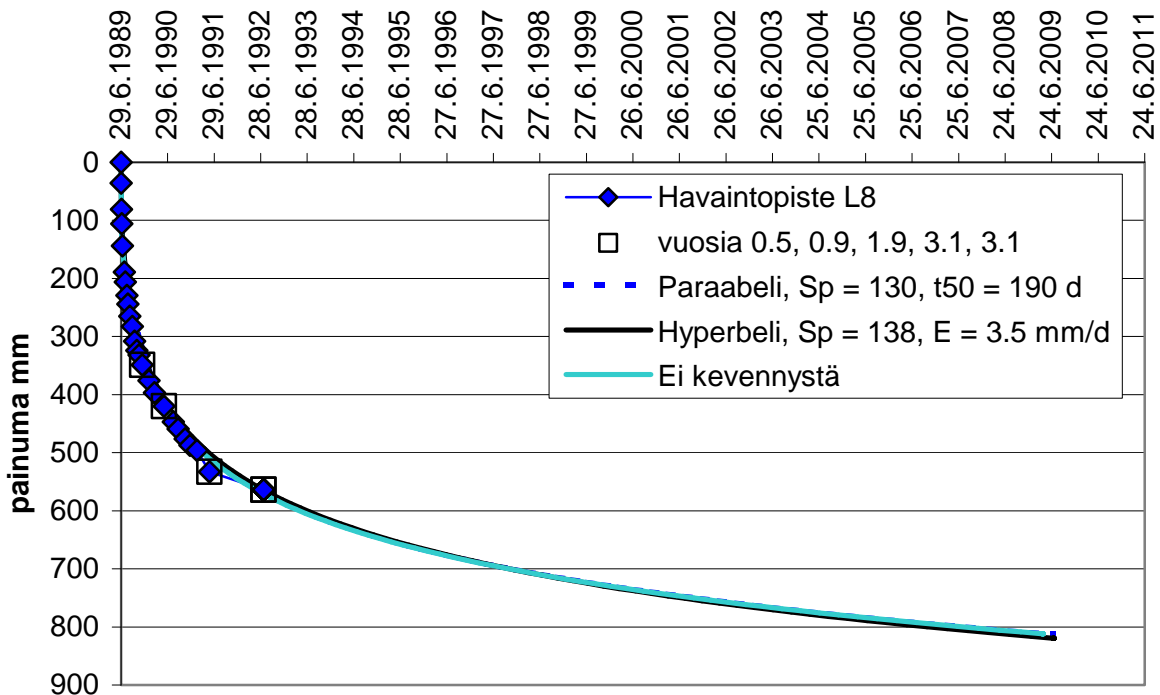
Havaintopiste L8 ▼

○ 1-puol. kl	H	w	m (b = 0)	m	alkupai.	t0 (d)	pain. t (a)	tod. t
● 2-puol. kl	15	90	6...10.1	7	105	2	20	20
input				80				
	Sp	t50/E	rs	B	c _v	pain. 20	virh. mm	
Paraabeli	130	190	115	0.061	21.2	813	ei havaint.	
Hyperbeli	138	3.50	109	0.064		819	ei havaint.	



Aika-Painumapotentiaali kuvaaja

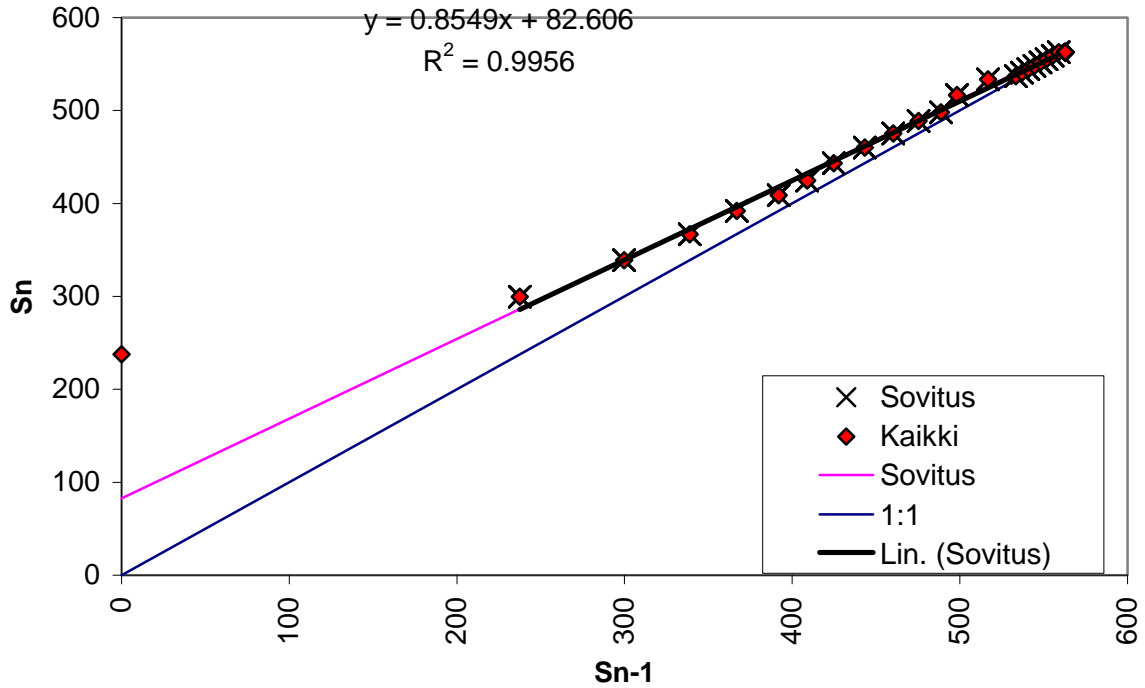
Aika-Painuma kuvaaja



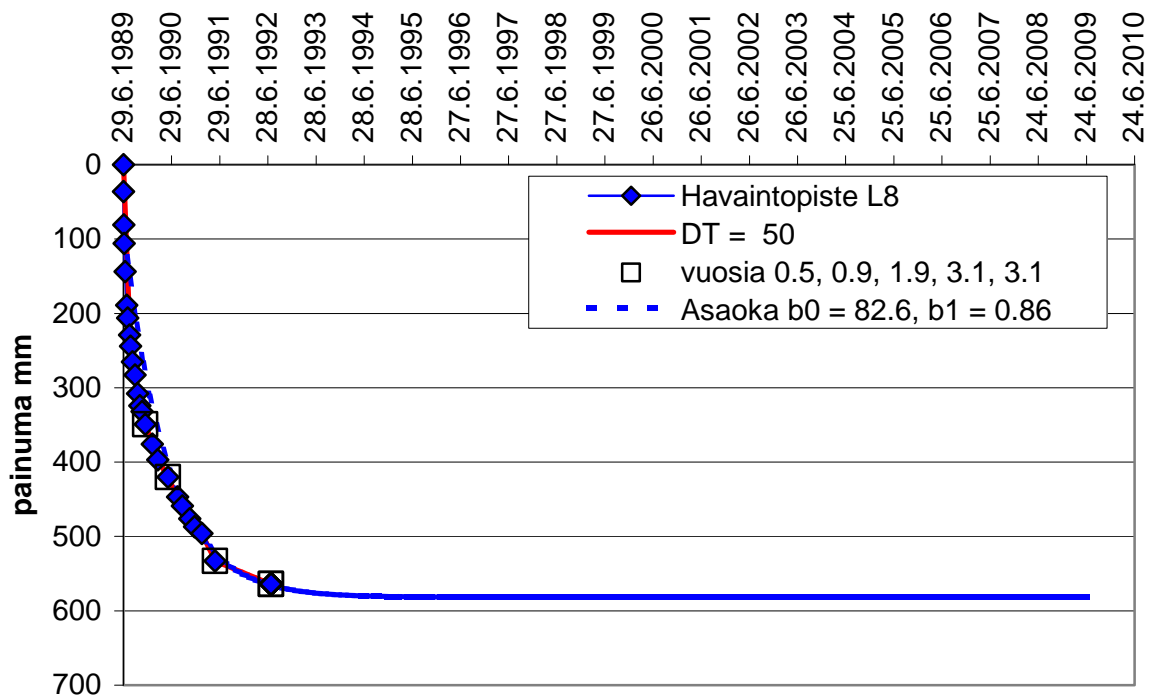


pain. t (a)	tod. t
20	20

input				output			
	β_0	β_1	t	Prim. Pain.		pain20	virh. mm
Asaoka	82.6	0.858	50.00	582		582	ei havaint.
	82.6	0.858	50.00				



Aika-Painuma kuvaaja





pain. t (a)

tod. t

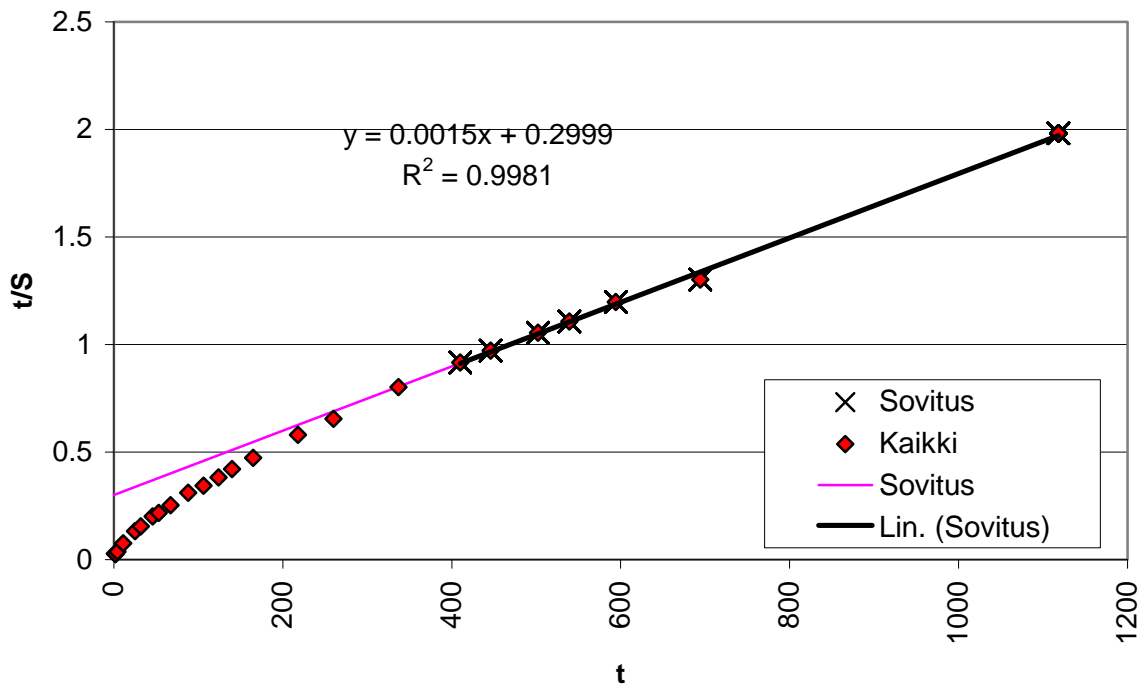
20

20

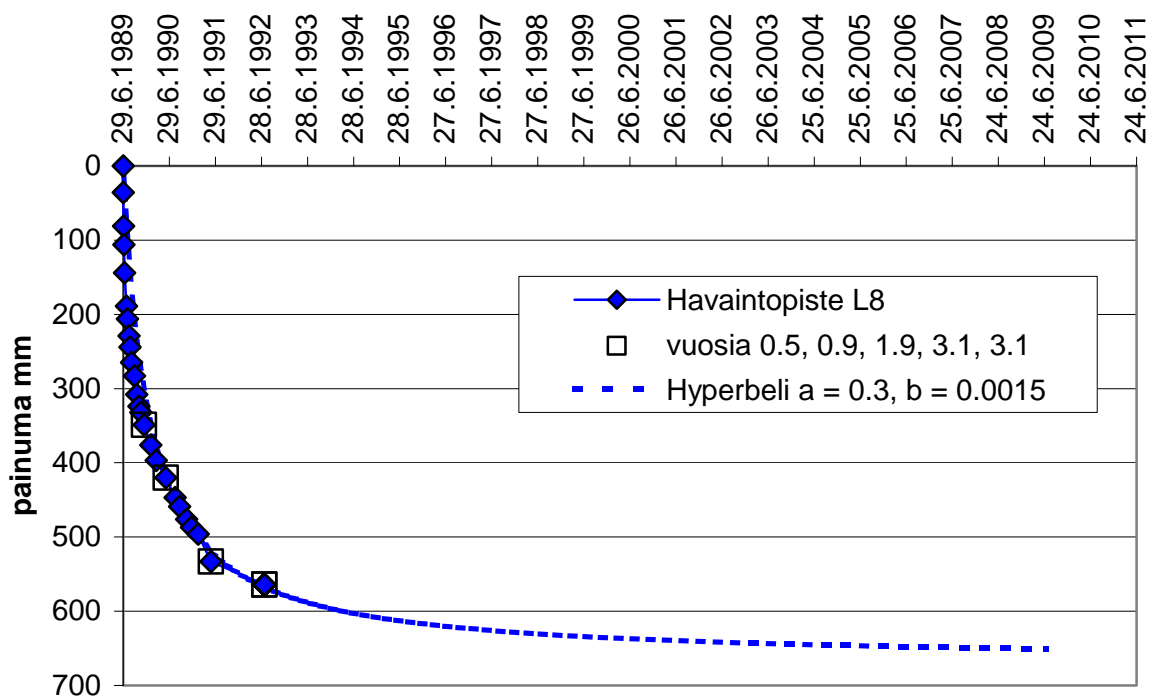
input

output

	a	b	Painuma	pain20	virh. mm
Hyperbeli	0.30	1.50E-03	669	651	ei havaint.



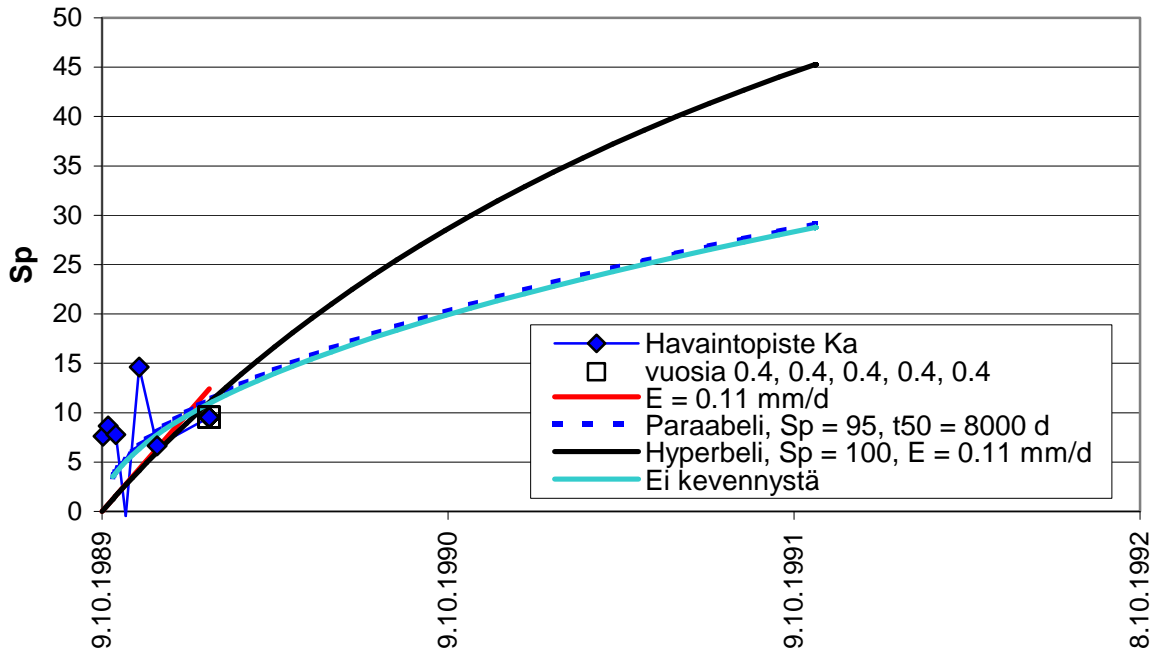
Aika-Painuma kuvaaja



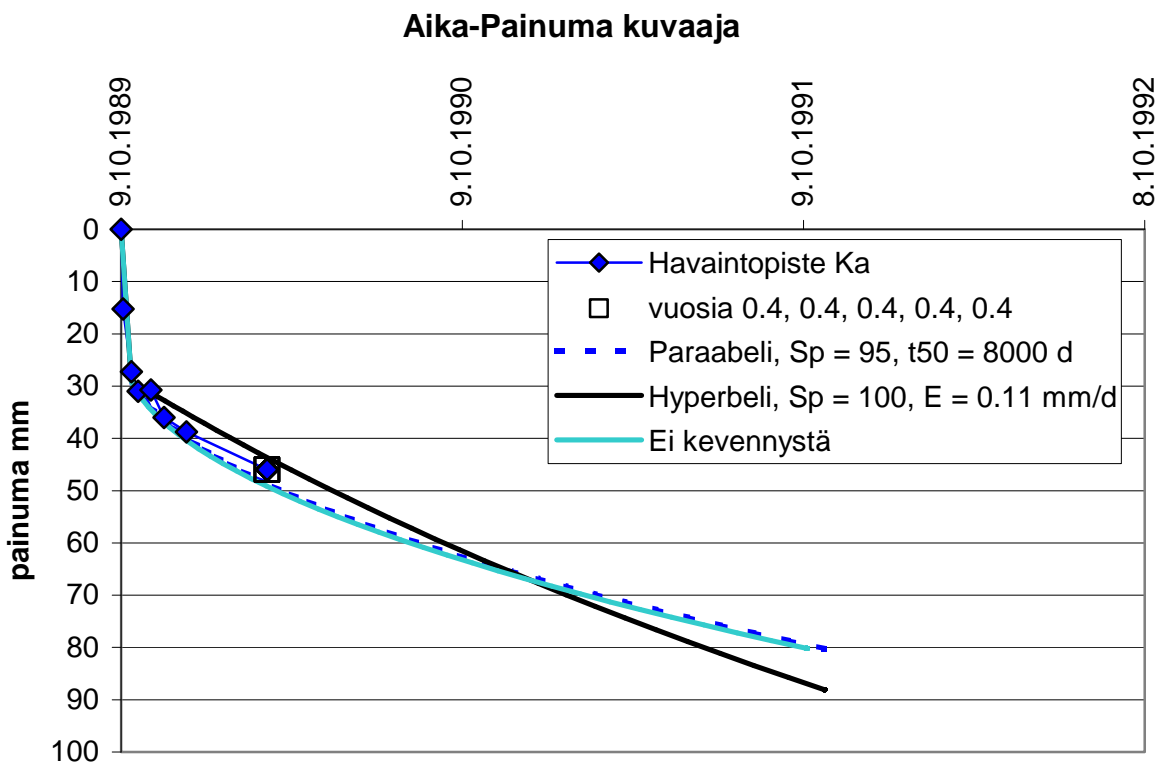
Koepenger, Paimio, 5 kk

Havaintopiste Ka ▼

● 1-puol. kl	H	w	m (b = 0)	m	alkupai.	t0 (d)	pain. t (a)	tod. t
○ 2-puol. kl	12	70	7.7...13	8	29	11	2	2
input				80				
	Sp	t50/E	rs	B	c _v	pain. 2	virh. mm	
Paraabeli	95	8000	126	0.063	0.6	79	ei havaint.	
Hyperbeli	100	0.11	120	0.067		87	ei havaint.	



Aika-Painumapotentiaali kuvaaja



Aika-Painuma kuvaaja



pain. t (a)

tod. t

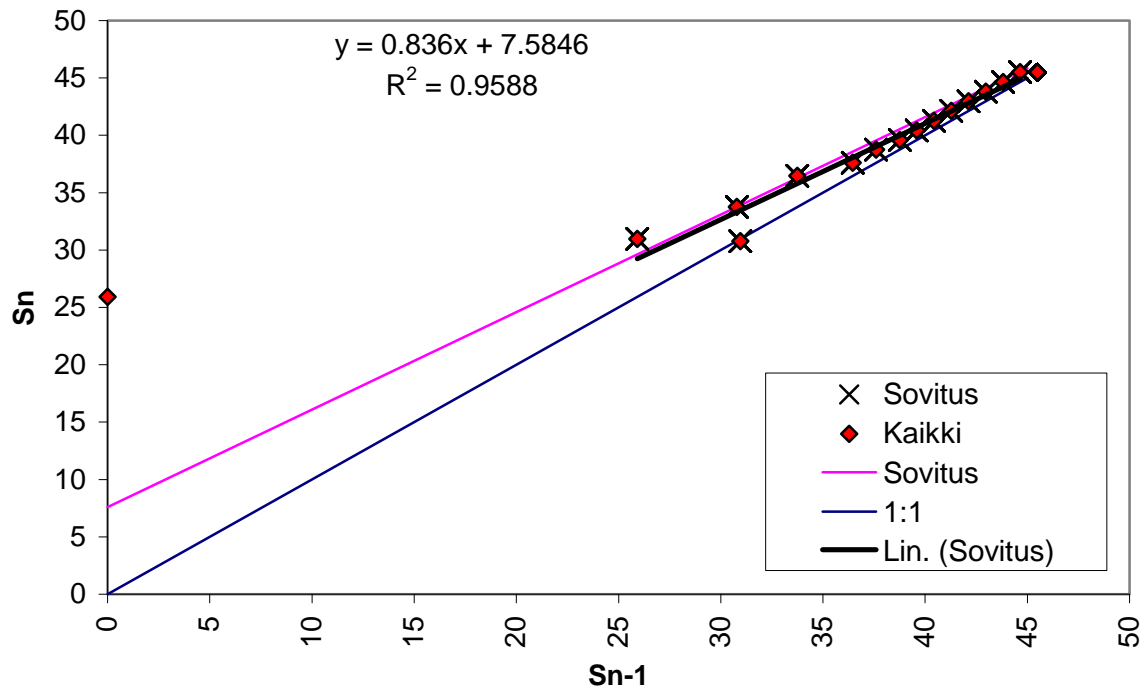
2

2

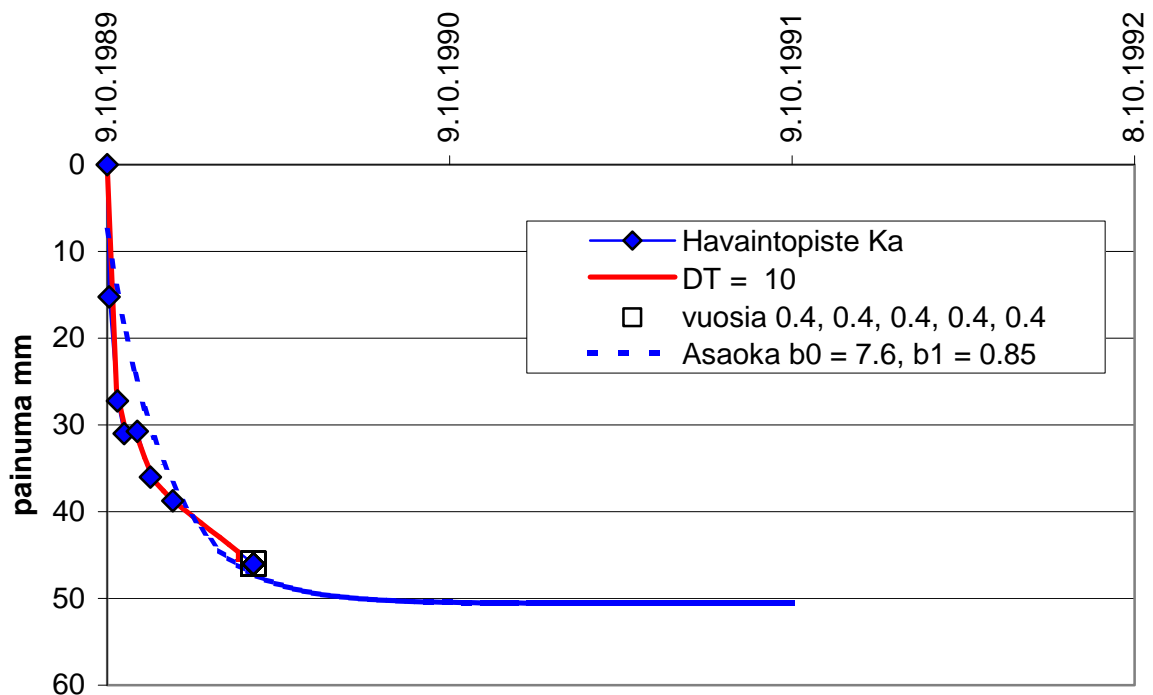
input

output

	β_0	β_1	t	Prim. Pain.		pain2	virh. mm
Asaoka	7.6	0.850	10.00	51		51	ei havaint.
	7.6	0.850	10.00				



Aika-Painuma kuvaaja





pain. t (a)

tod. t

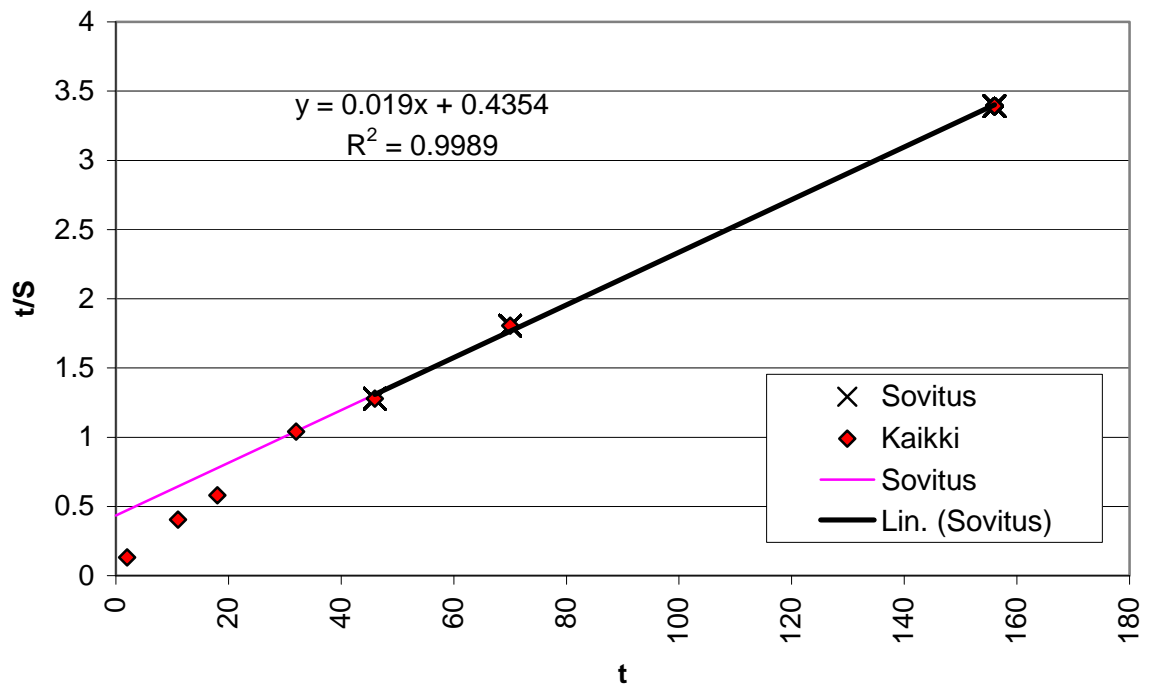
2

2

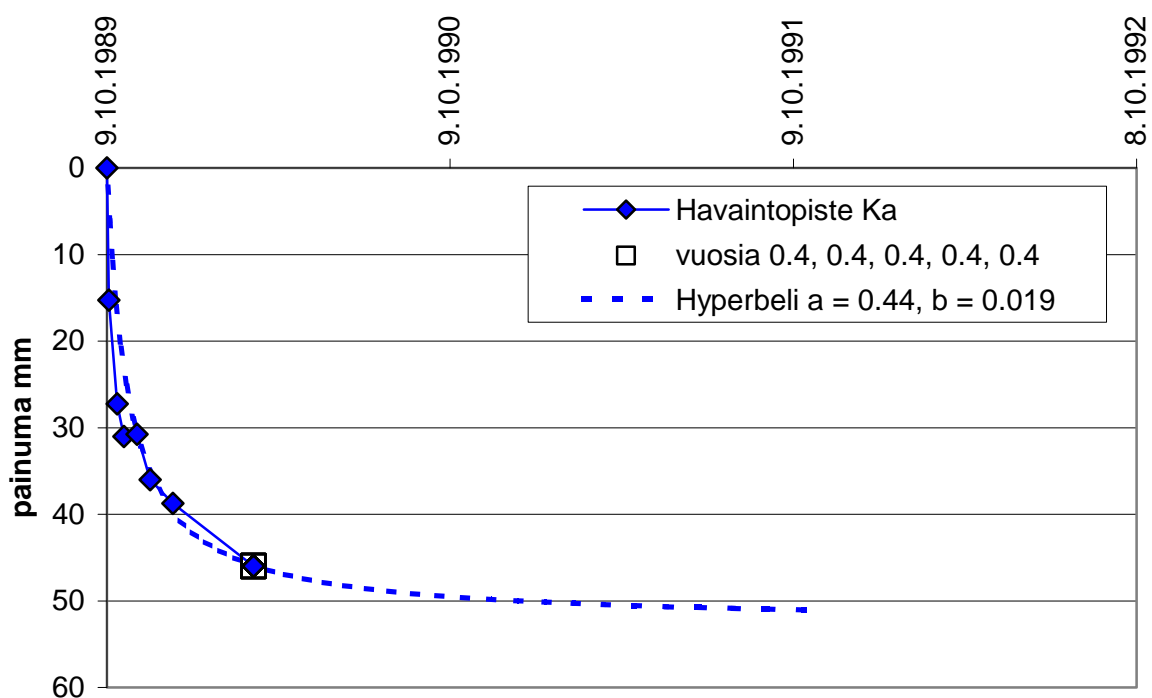
input

output

	a	b	Painuma	virh. mm
Hyperbeli	0.44	1.90E-02	53	51



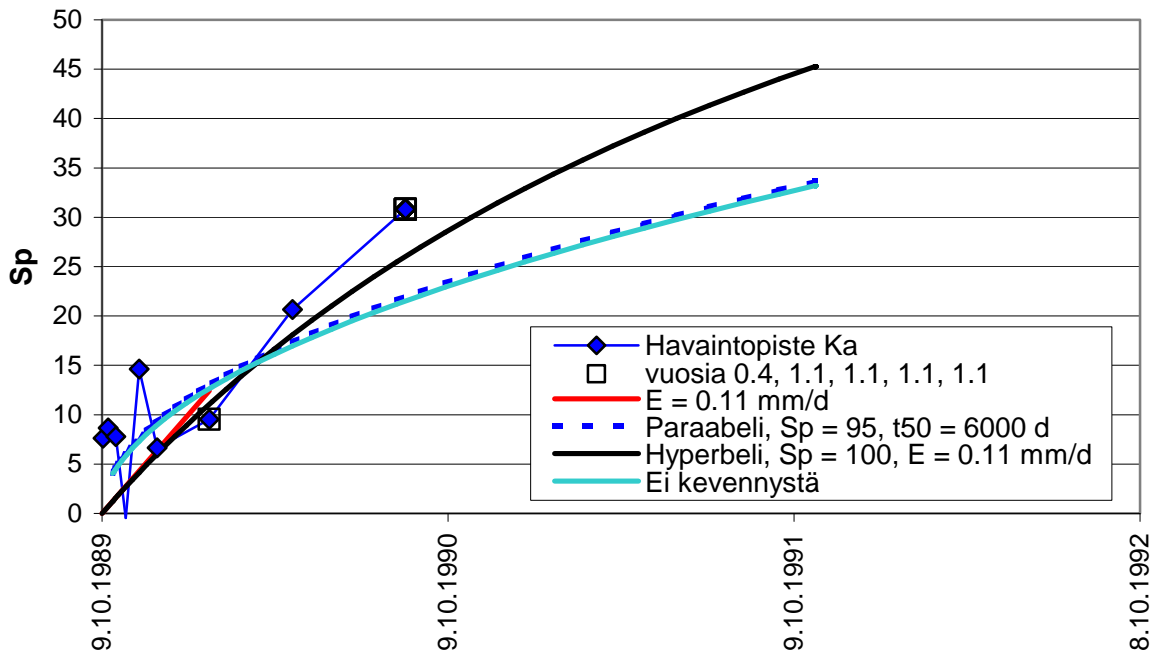
Aika-Painuma kuvaaja



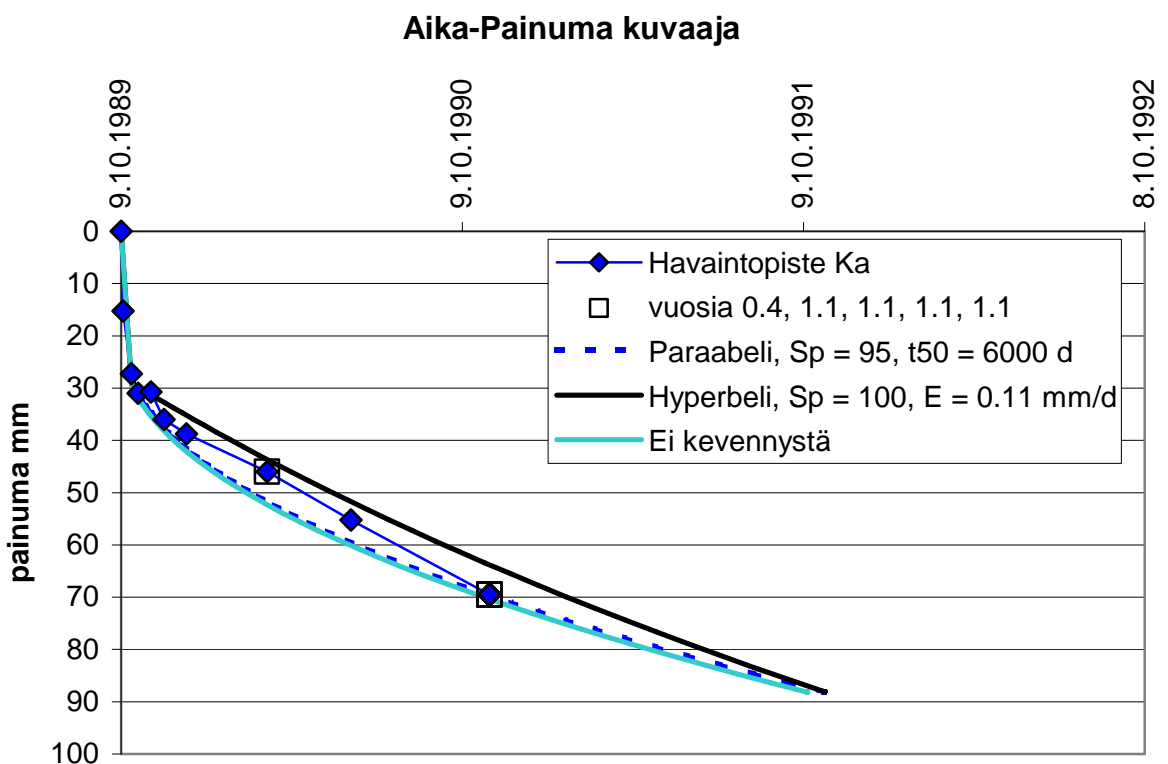
Koepenger, Paimio, 1 v

Havaintopiste Ka ▼

● 1-puol. kl	H	w	m (b = 0)	m	alkupai.	t0 (d)	pain. t (a)	tod. t
○ 2-puol. kl	12	70	7.7...13	8	29	11	2	2
input				80				
	Sp	t50/E	rs	B	c _v	pain. 2	virh. mm	
Paraabeli	95	6000	126	0.063	0.8	87	ei havaint.	
Hyperbeli	100	0.11	120	0.067		87	ei havaint.	



Aika-Painumapotentialiaali kuvaaja



Aika-Painuma kuvaaja



pain. t (a)

tod. t

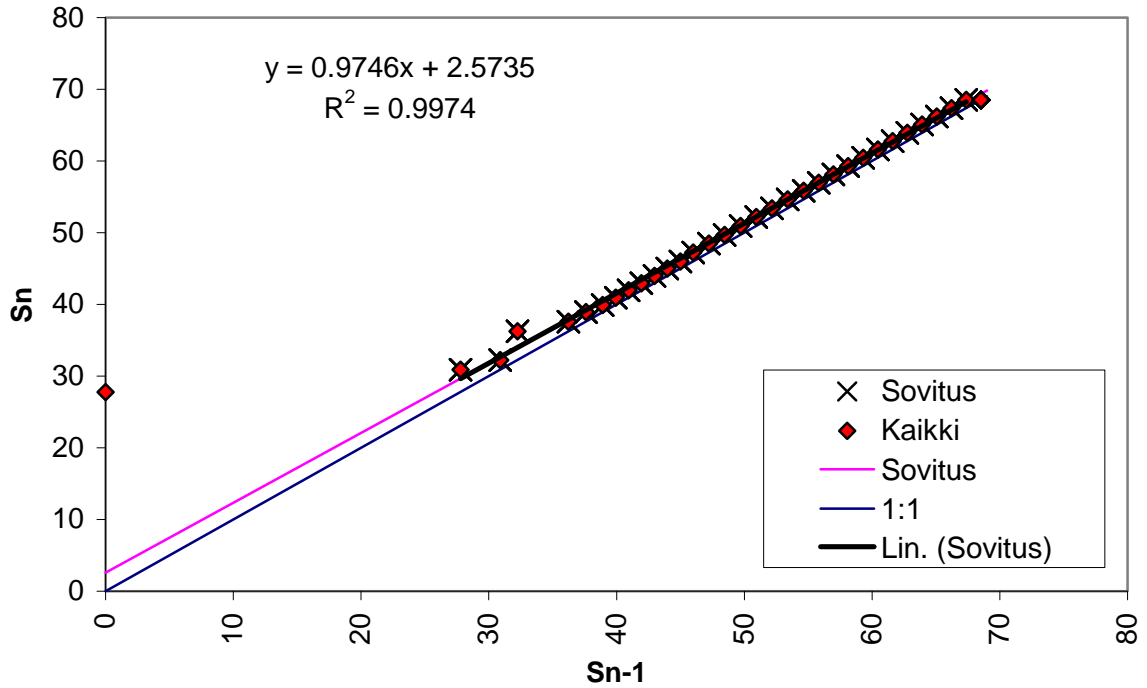
2

2

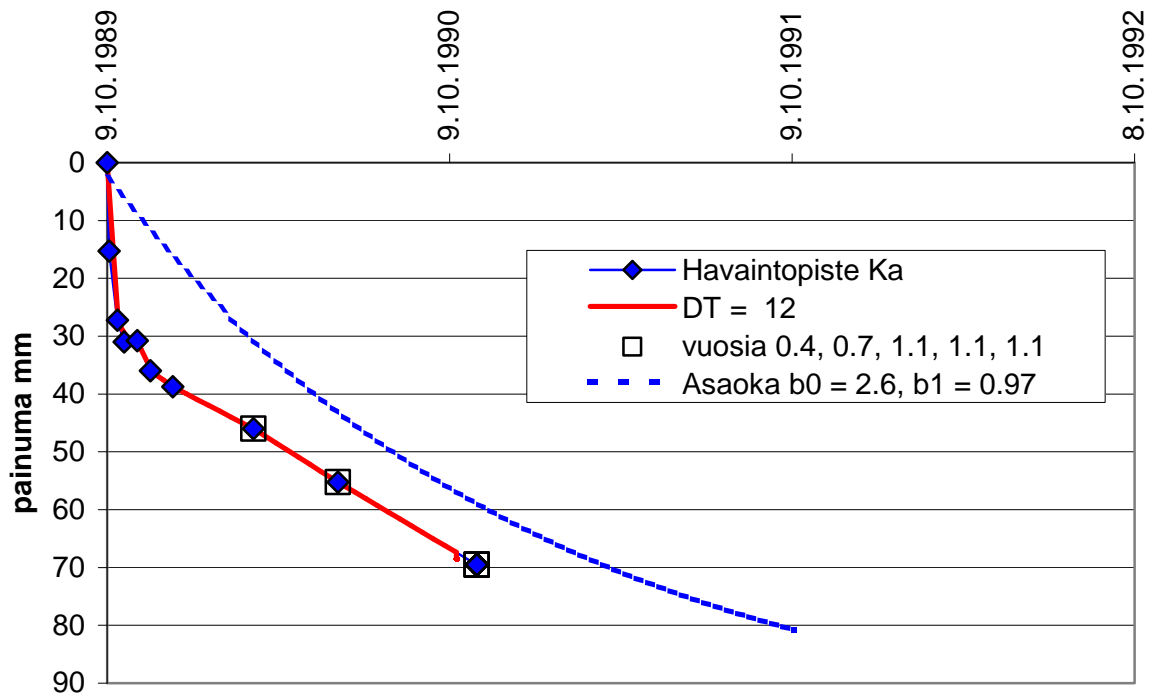
input

output

	β_0	β_1	t	Prim. Pain.	pain2	virh. mm
Asaoka	2.6	0.975	12.00	101	81	ei havaint.
	2.6	0.975	12.00			



Aika-Painuma kuvaaja





pain. t (a)

tod. t

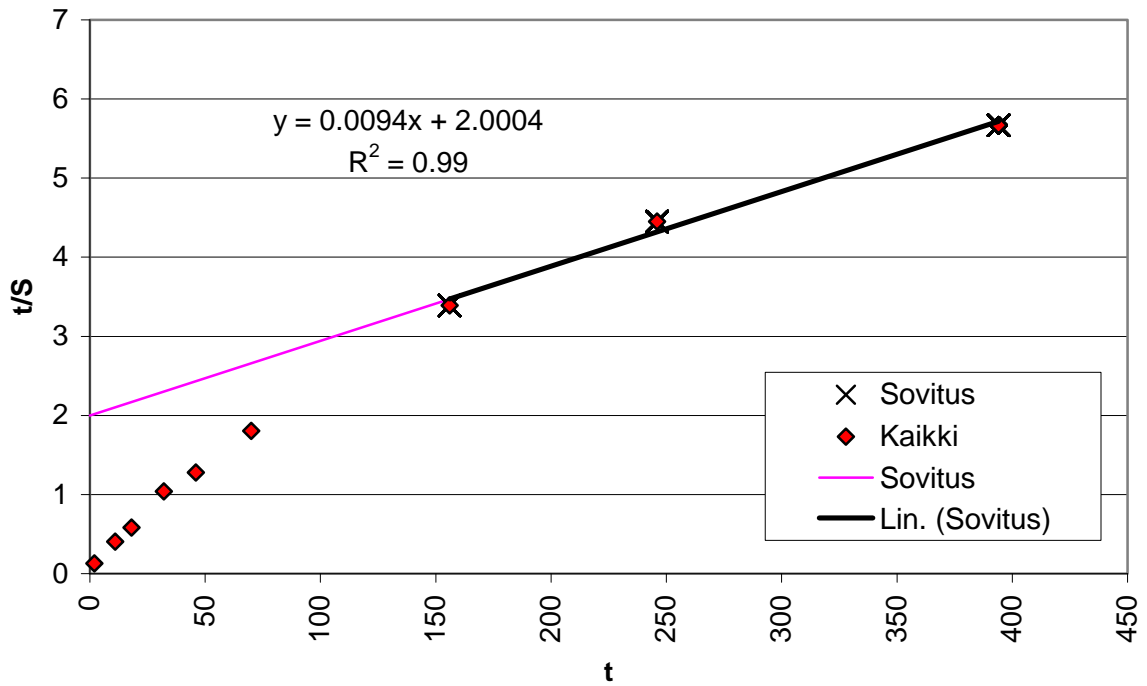
2

2

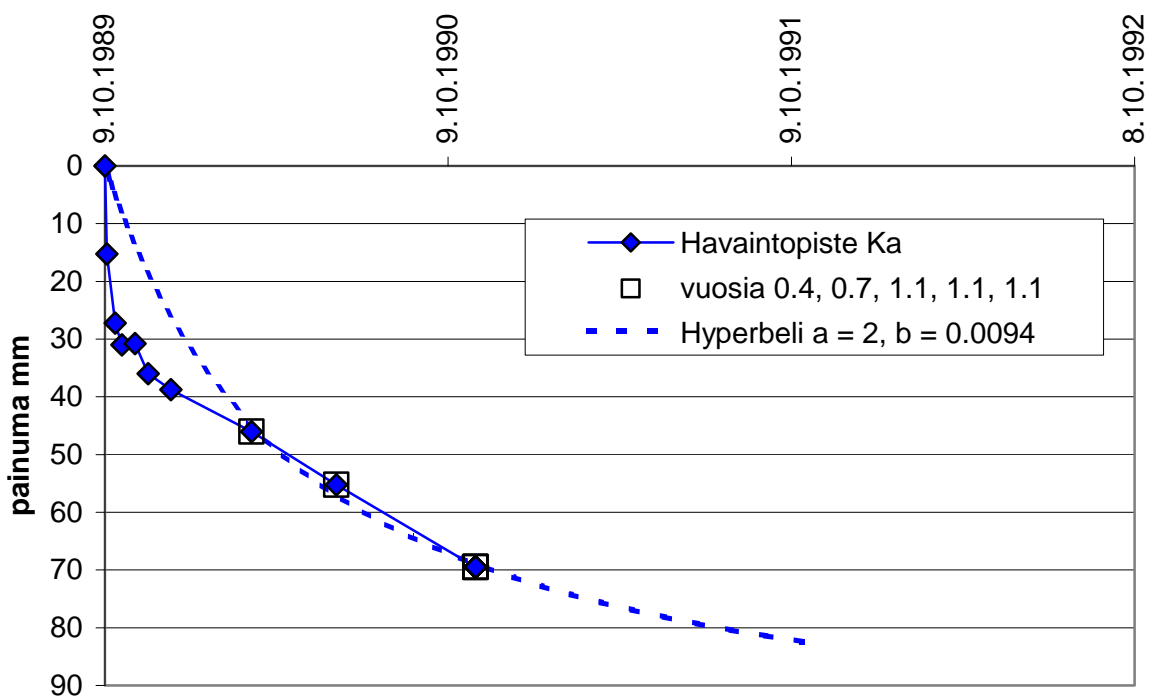
input

output

	a	b	Painuma	virh. mm
Hyperbeli	2.00	9.44E-03	106	ei havaint.



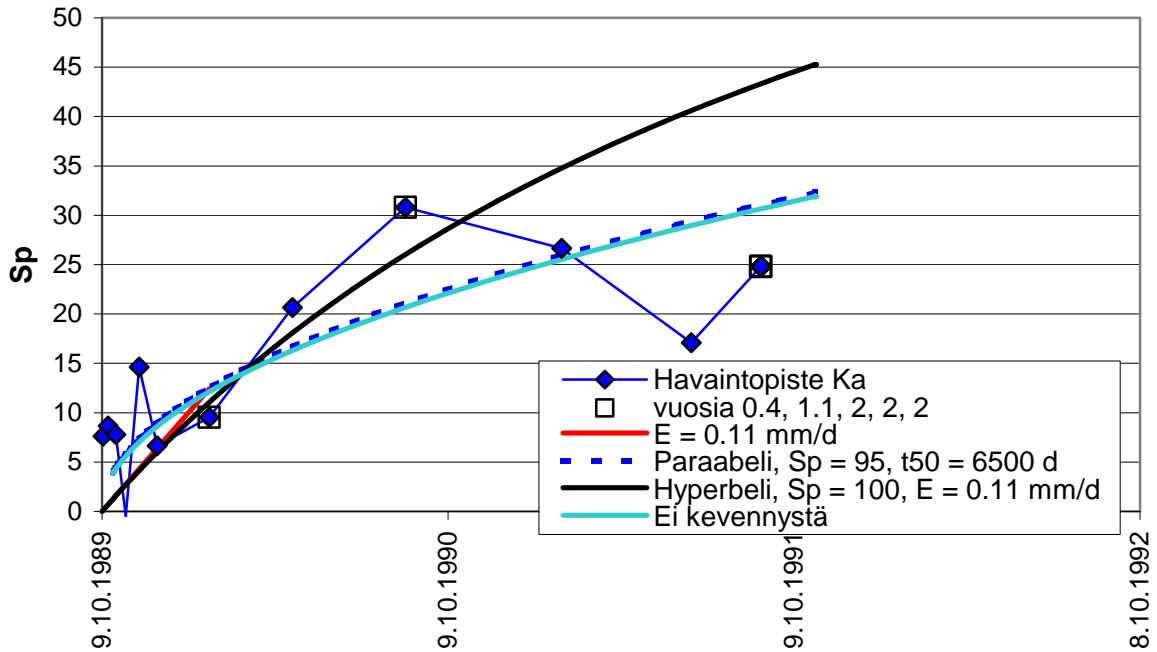
Aika-Painuma kuvaaja



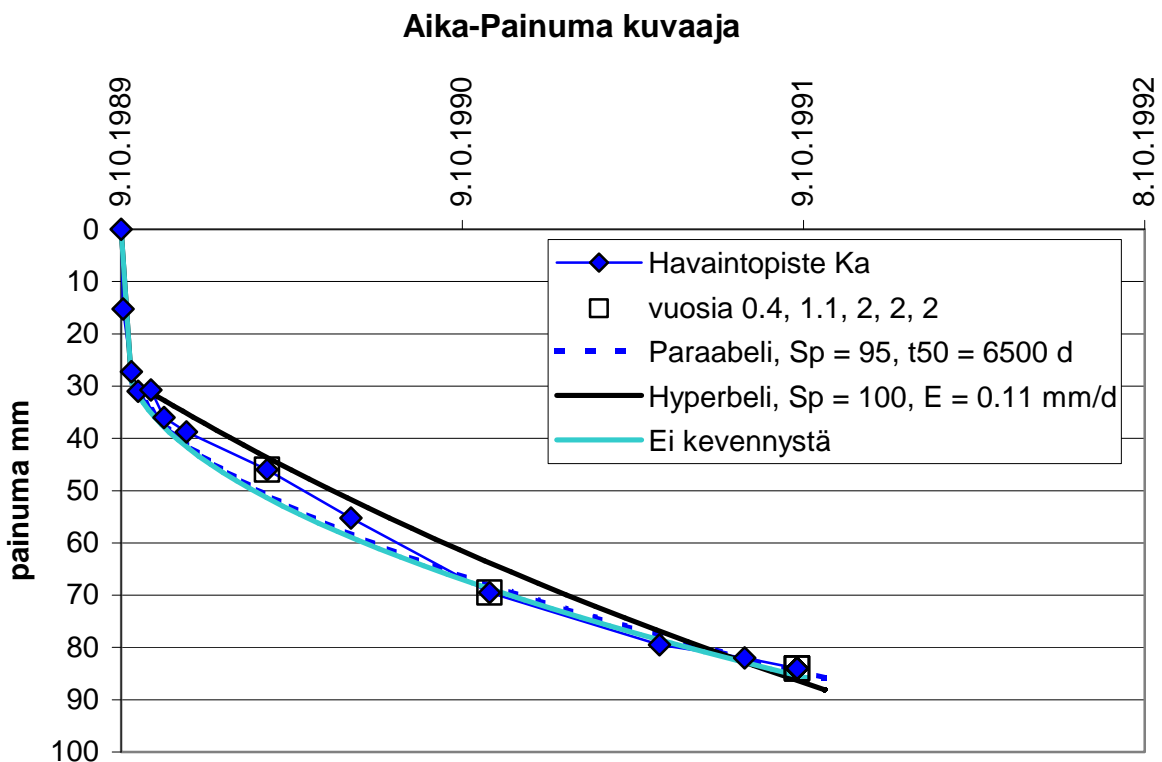
Koepenger, Paimio, 2 v

Havaintopiste Ka ▼

● 1-puol. kl	H	w	m (b = 0)	m	alkupai.	t0 (d)	pain. t (a)	tod. t
○ 2-puol. kl	12	70	7.7...13	8	29	11	2	1.98
input				80				
	Sp	t50/E	rs	B	c _v	pain. 1.98	virh. mm	
Paraabeli	95	6500	126	0.063	0.7	85	1	
Hyperbeli	100	0.11	120	0.067		86	2	



Aika-Painumapotentialiaali kuvaaja



Aika-Painuma kuvaaja



pain. t (a)

tod. t

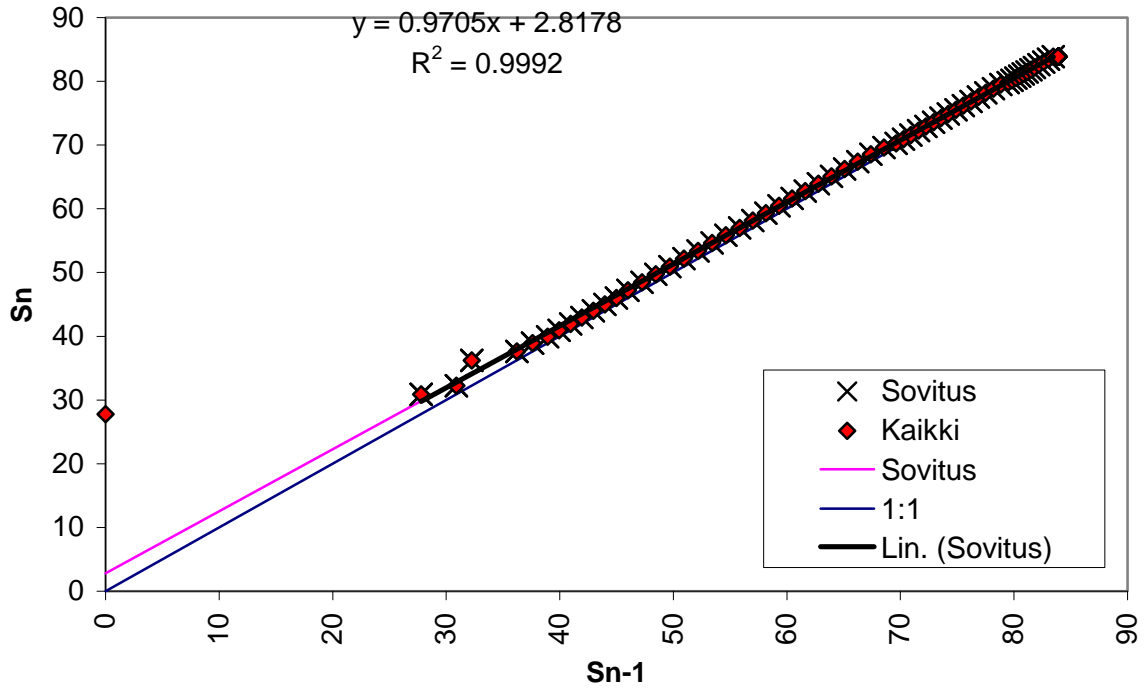
2

2

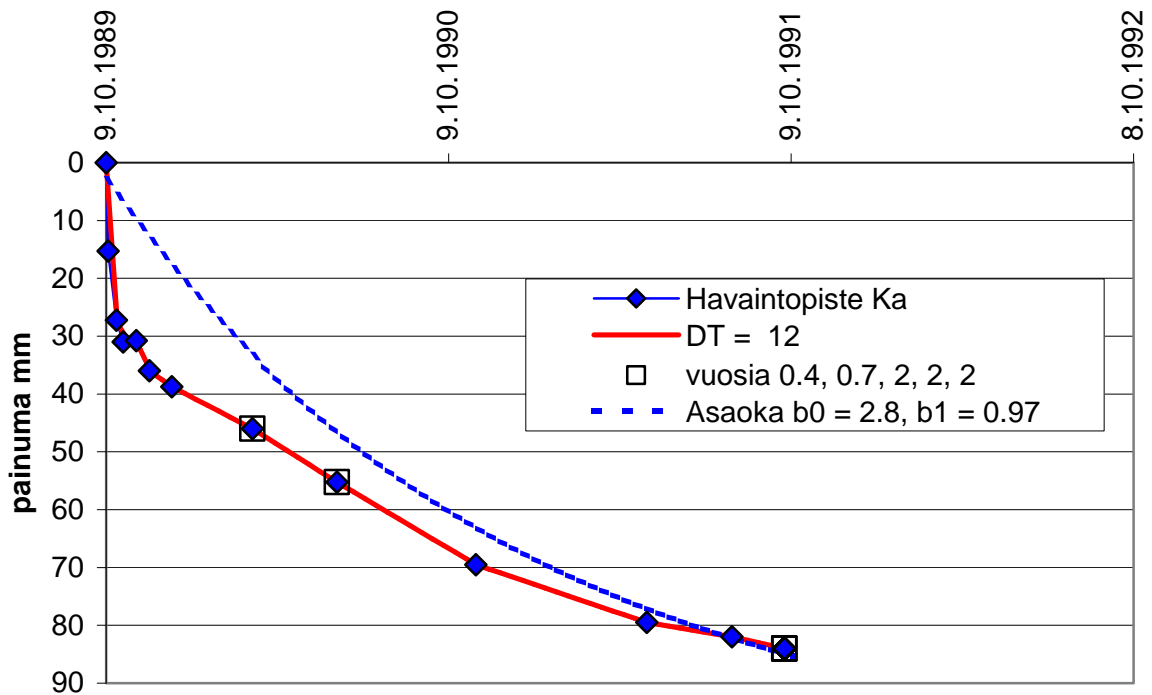
input

output

	β_0	β_1	t	Prim. Pain.		pain2	virh. mm
Asaoka	2.8	0.973	12.00	104		85	ei havaint.
	2.8	0.973	12.00				



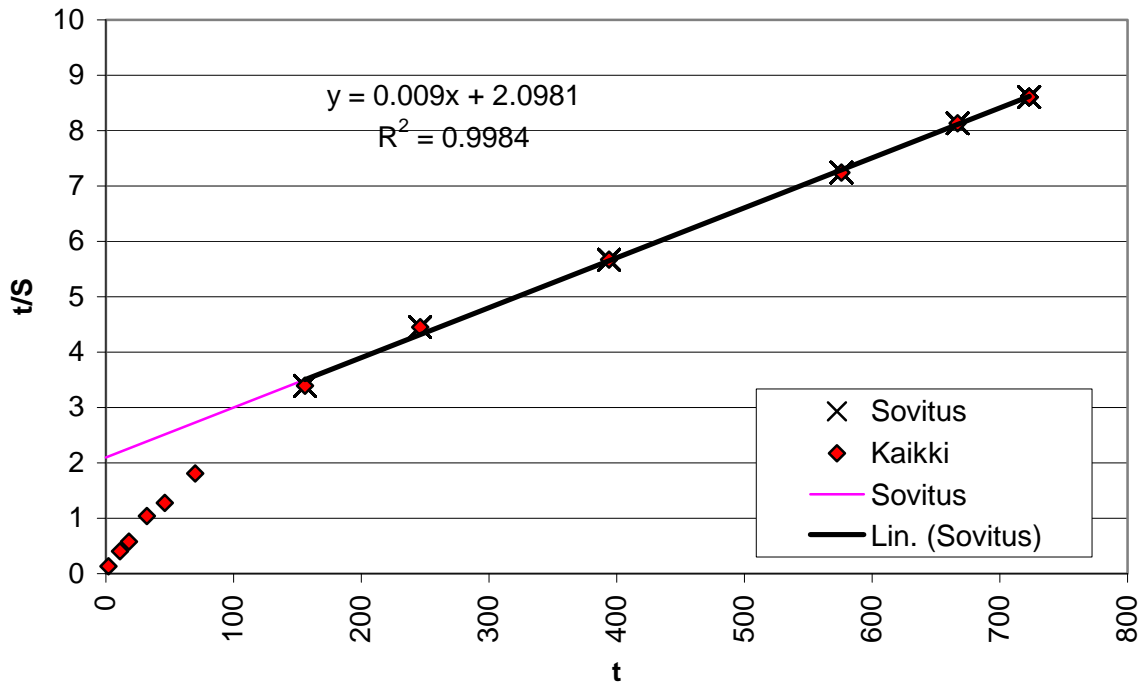
Aika-Painuma kuvaaja



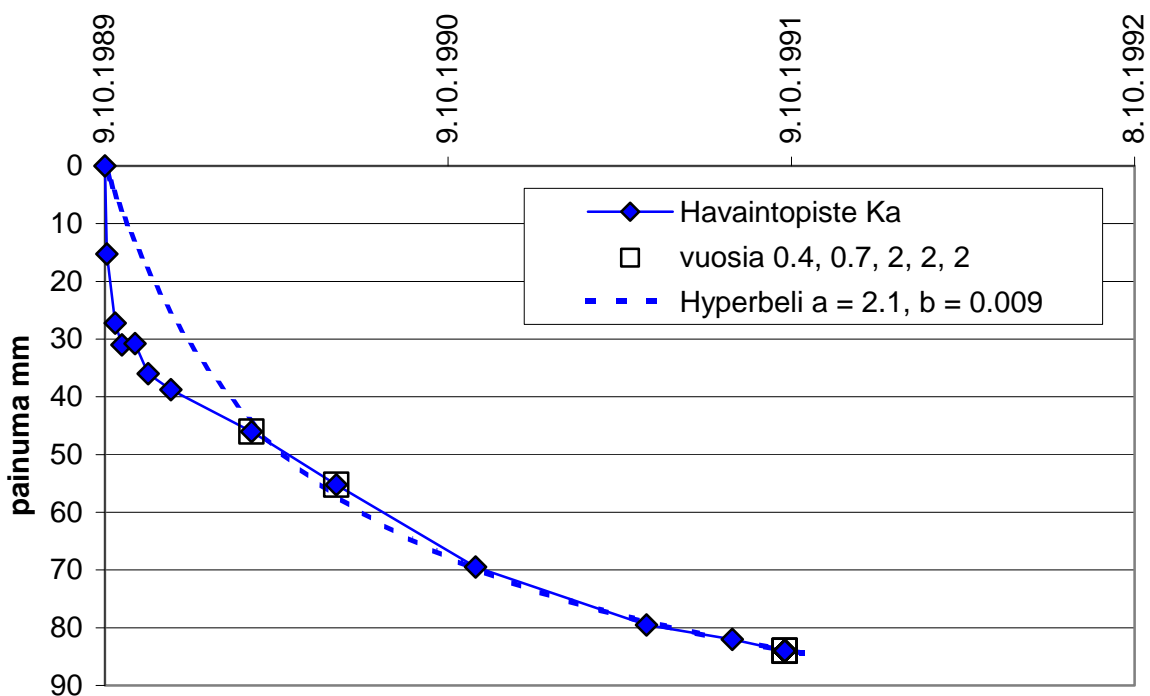


pain. t (a)	tod. t
2	1.98

input			output			
	a	b	Painuma		pain1.98	virh. mm
Hyperbeli	2.10	9.02E-03	111		84	0



Aika-Painuma kuvaaja

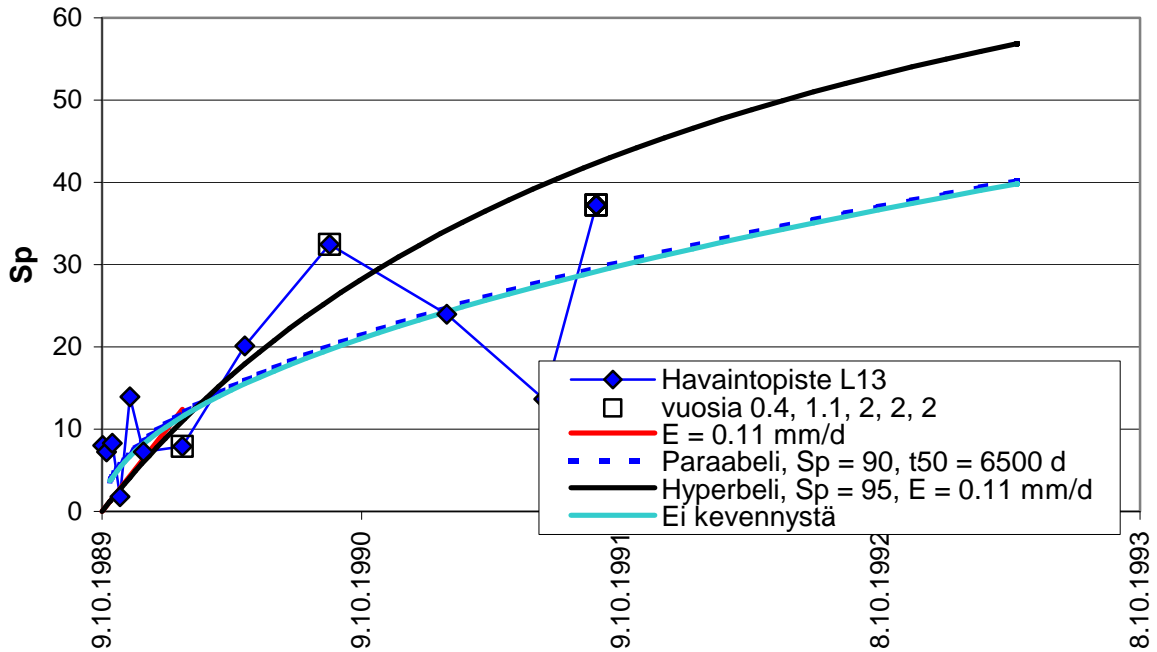


Koepenger, Paimio, 2 v

Havaintopiste L13

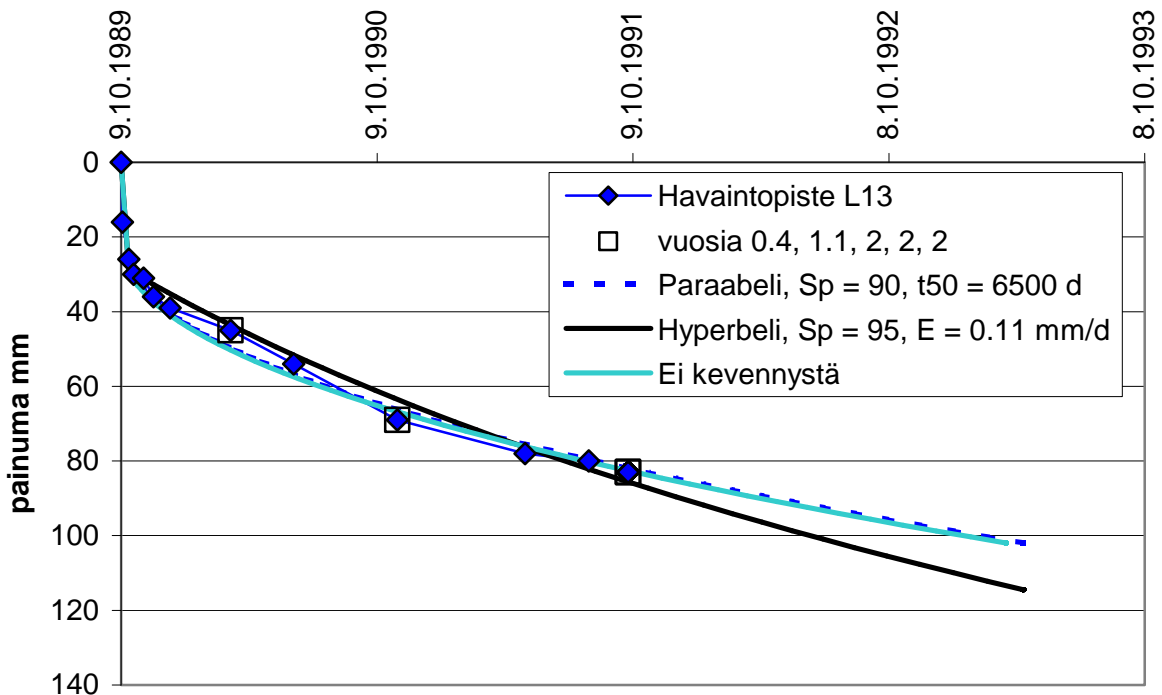
● 1-puol. kl	H	w	m (b = 0)	m	alkupai.	t0 (d)	pain. t (a)	tod. t
○ 2-puol. kl	12	70	7.7...13	8	29	11	2	1.98

input				80				
	Sp	t50/E	rs	B	c _v	pain. 1.98	virh. mm	
Paraabeli	90	6500	133	0.060	0.7	82	-1	
Hyperbeli	95	0.11	126	0.063		86	3	



Aika-Painumapotentiaali kuvaaja

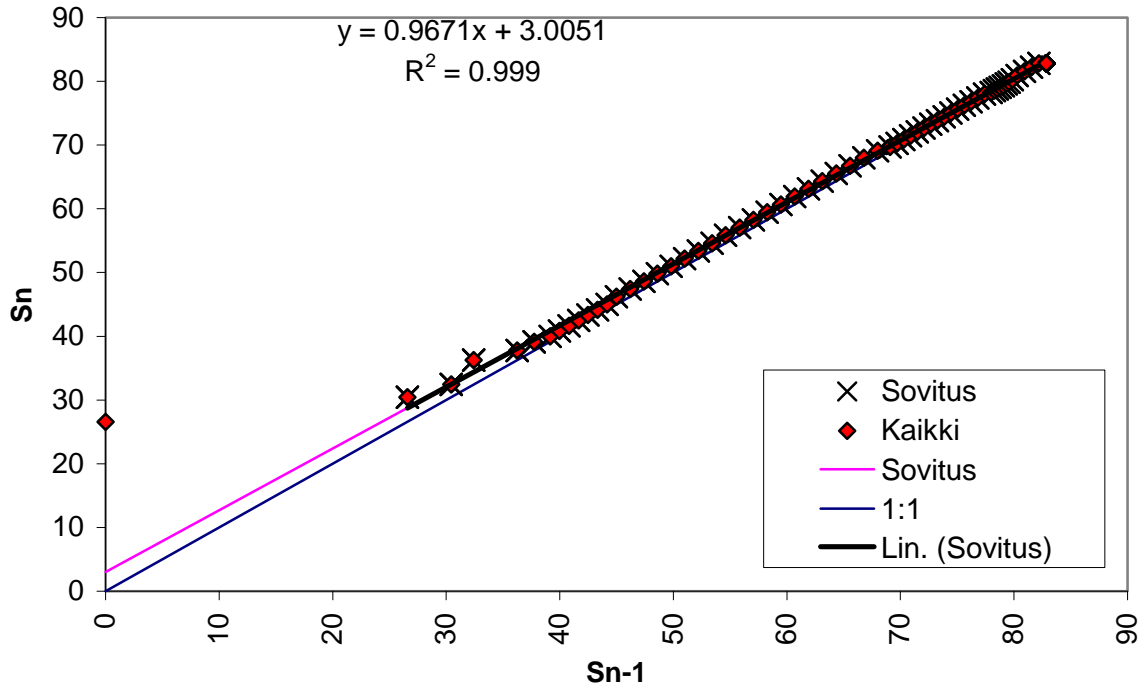
Aika-Painuma kuvaaja



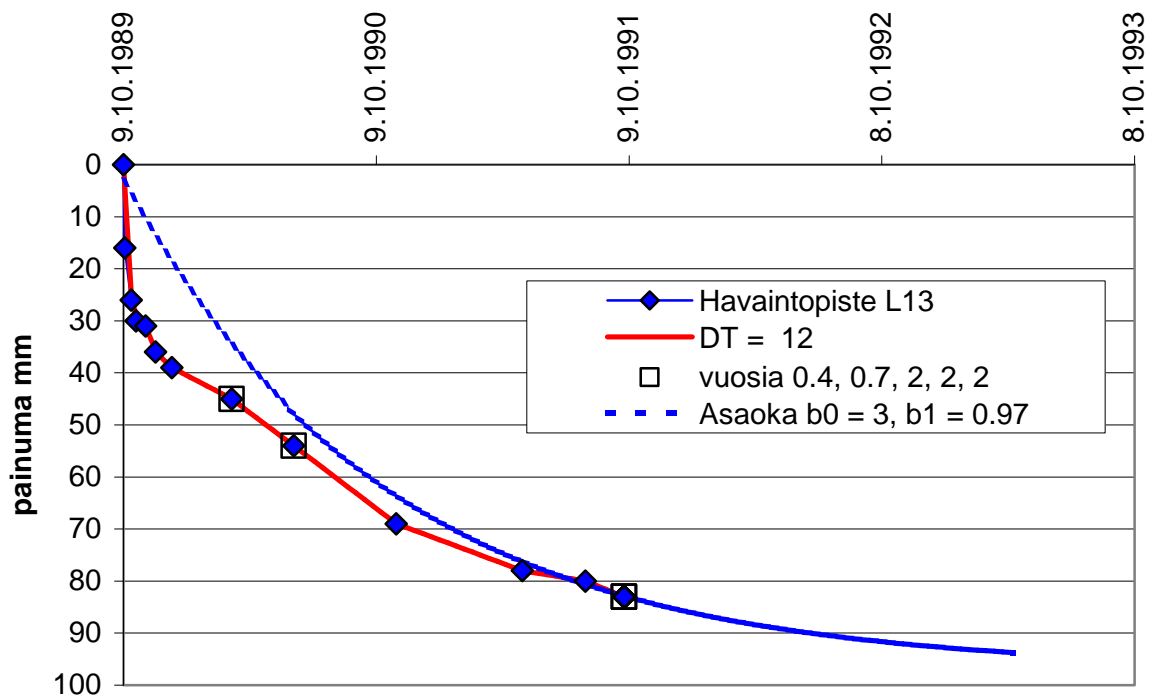


pain. t (a)	tod. t
2	2

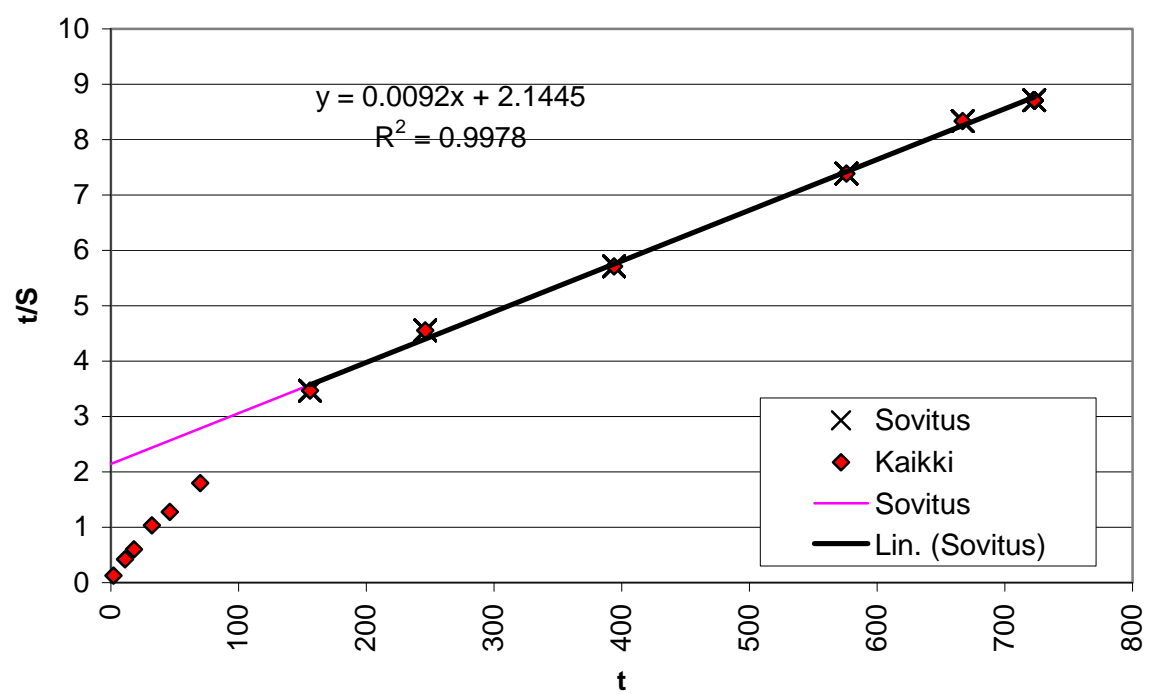
input				output			
	β_0	β_1	t	Prim. Pain.		pain2	virh. mm
Asaoka	3.0	0.969	12.00	97		83	ei havaint.
	3.0	0.969	12.00				



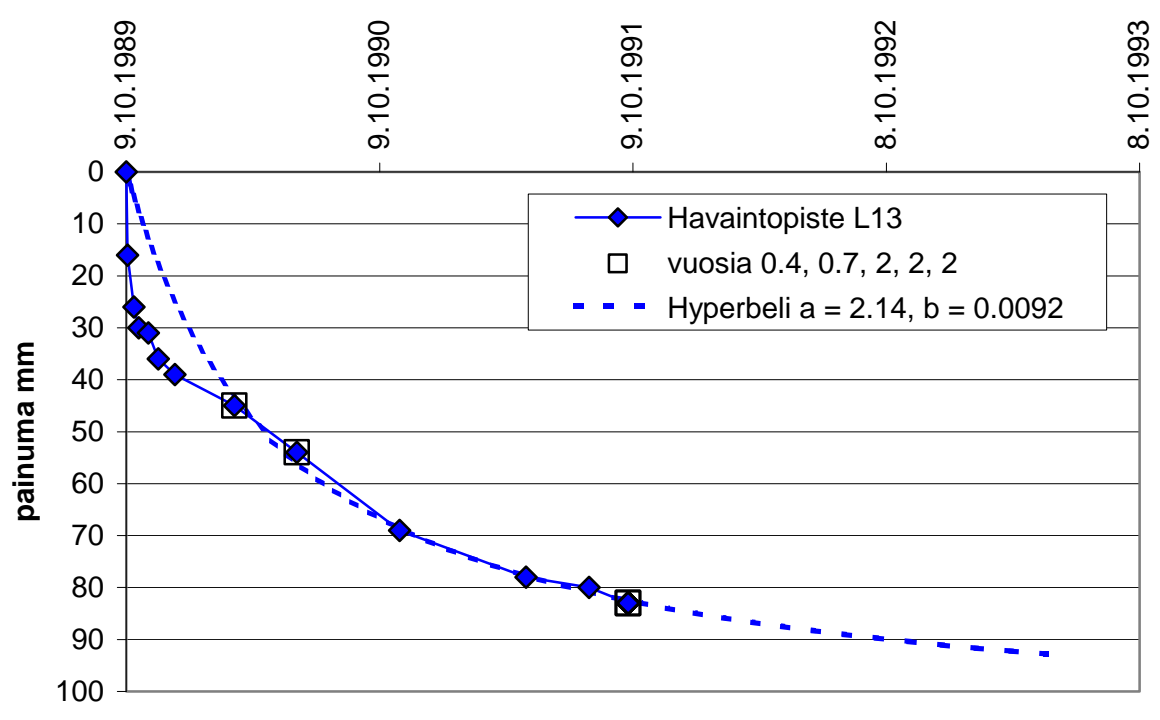
Aika-Painuma kuvaaja



Painumaennuste		Hyperbeli		LIITE V / s. 12	
Koepenger, Paimio, 2 v				Havaintopiste L13	
				pain. t (a)	tod. t
				2	1.98
input			output		
	a	b	Painuma		virh. mm
Hyperbeli	2.14	9.16E-03	109	82	-1



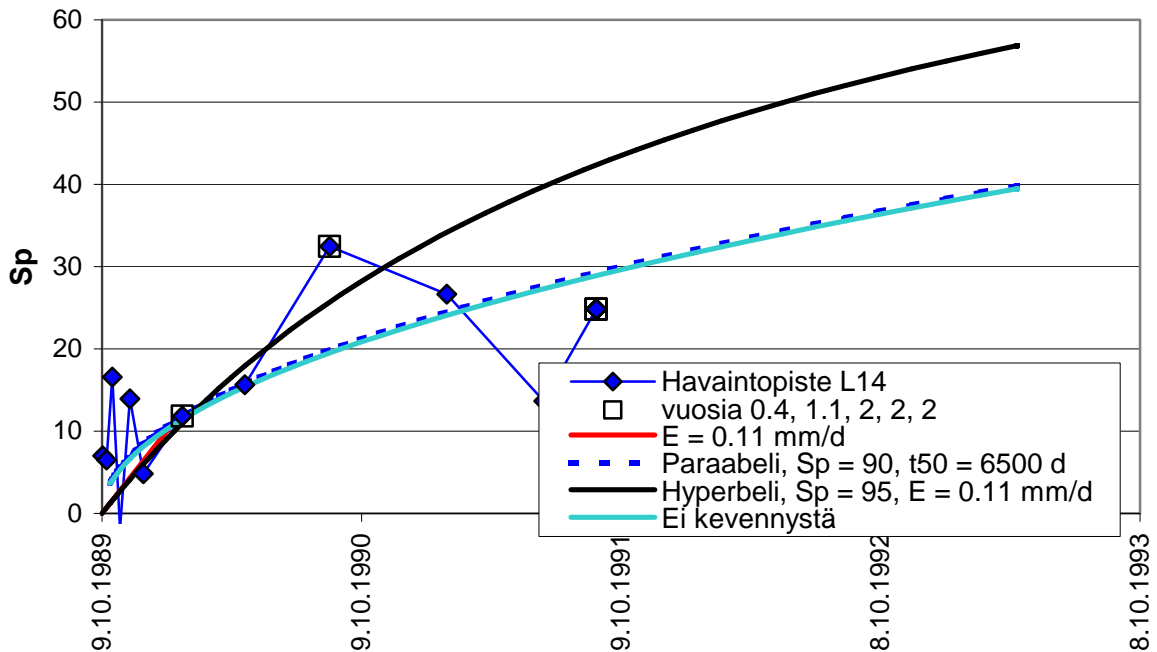
Aika-Painuma kuvaaja



Koepenger, Paimio, 2 v

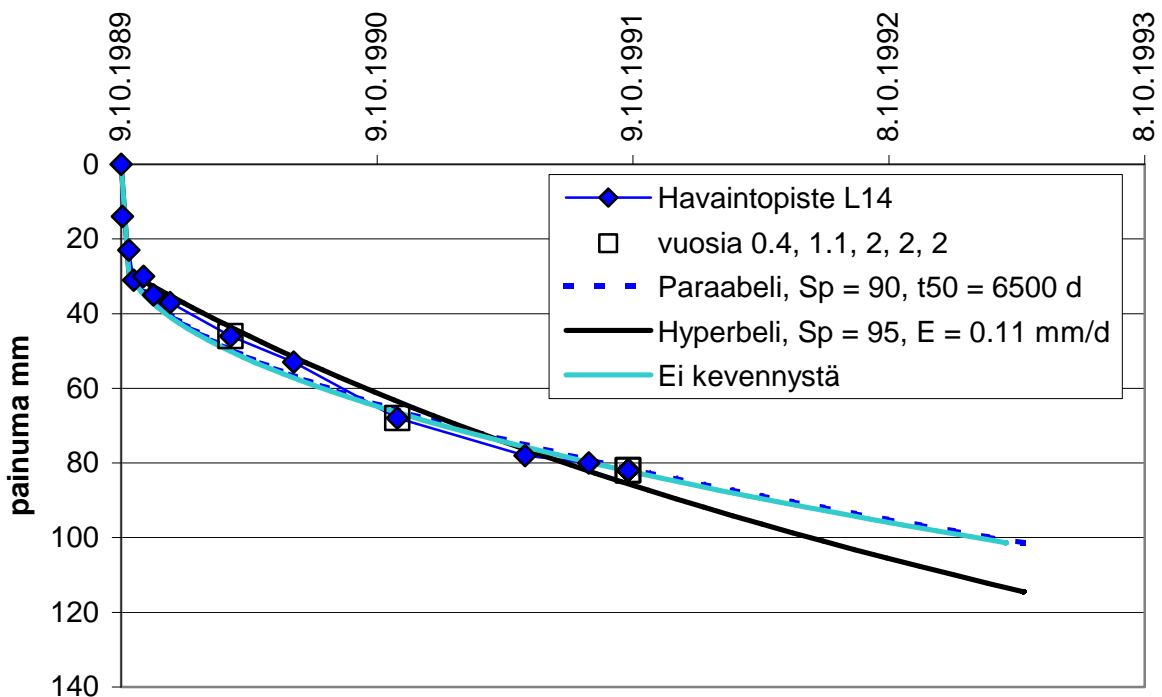
Havaintopiste L14

● 1-puol. kl	H	w	m (b = 0)	m	alkupai.	t0 (d)	pain. t (a)	tod. t
○ 2-puol. kl	12	70	7.7...13	8	29	11	2	1.98
input				80				
	Sp	t50/E	rs	B	c _v	pain. 1.98	virh. mm	
Paraabeli	90	6500	134	0.060	0.7	81	-1	
Hyperbeli	95	0.11	126	0.063		86	4	



Aika-Painumapotentiaali kuvaaja

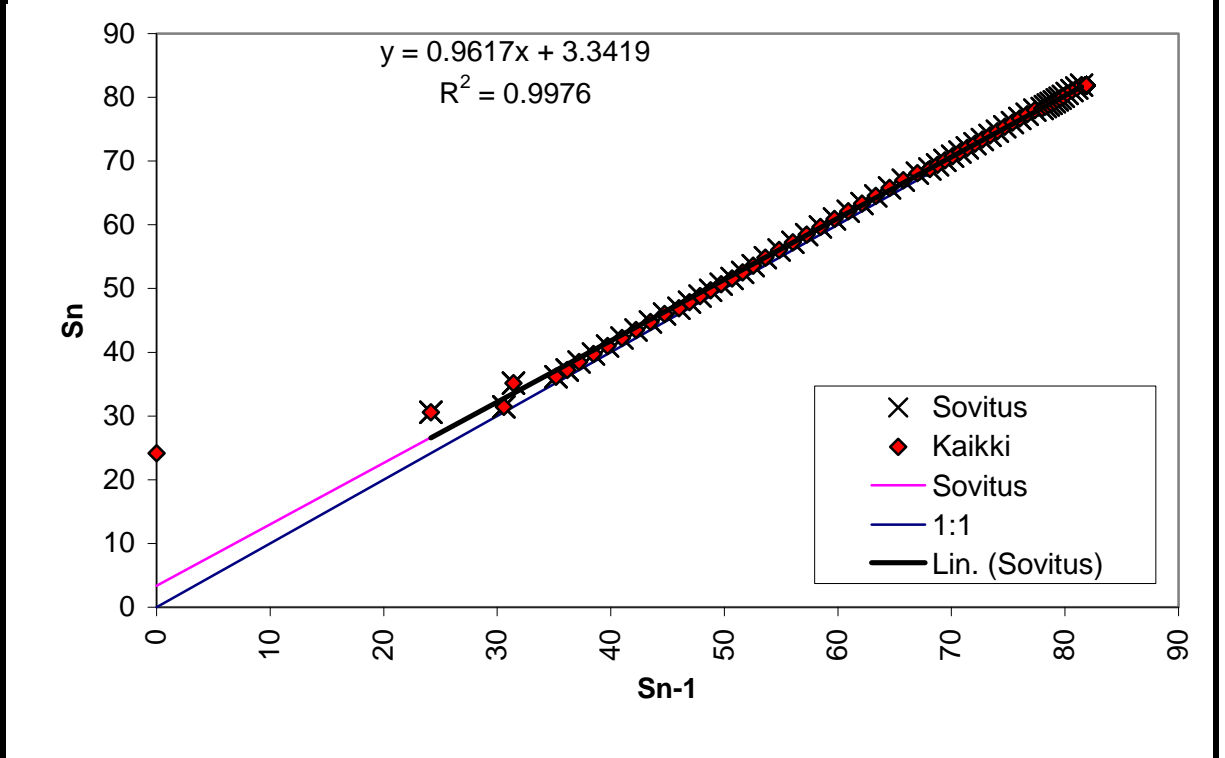
Aika-Painuma kuvaaja



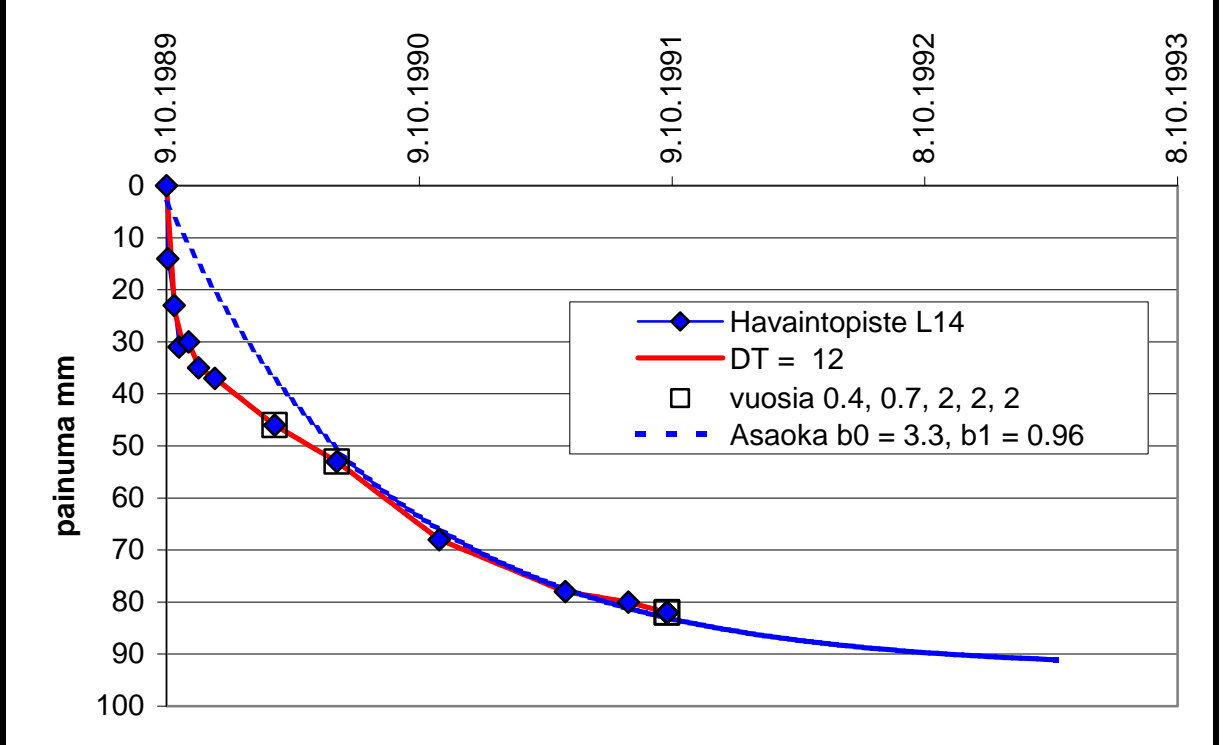


pain. t (a)	tod. t
2	2

input				output			
	β_0	β_1	t	Prim. Pain.		pain2	virh. mm
Asaoka	3.3	0.964	12.00	93		83	ei havaint.
	3.3	0.964	12.00				



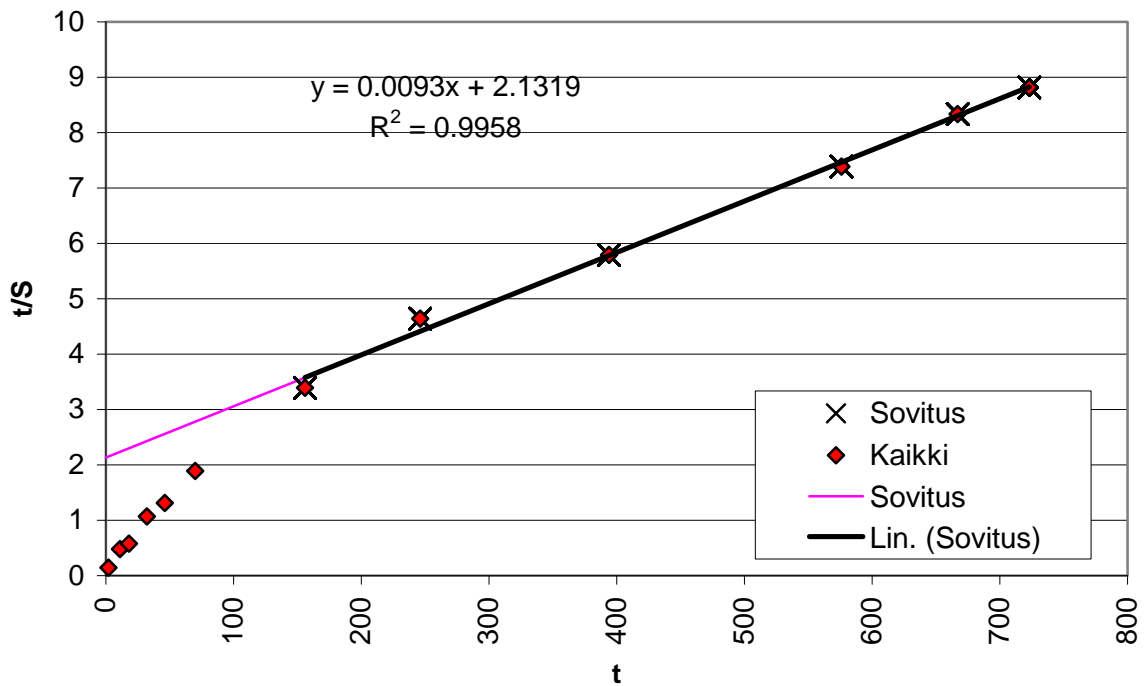
Aika-Painuma kuvaaja



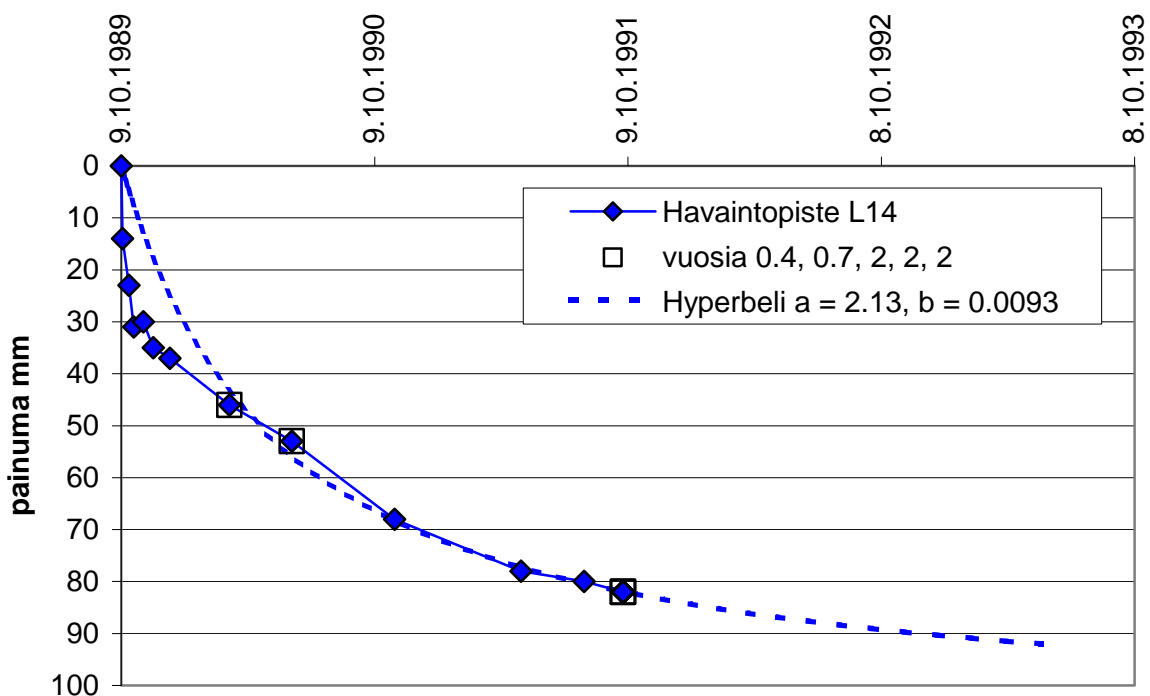


pain. t (a)	tod. t
2	1.98

input			output			
	a	b	Painuma		pain1.98	virh. mm
Hyperbeli	2.13	9.26E-03	108		82	0



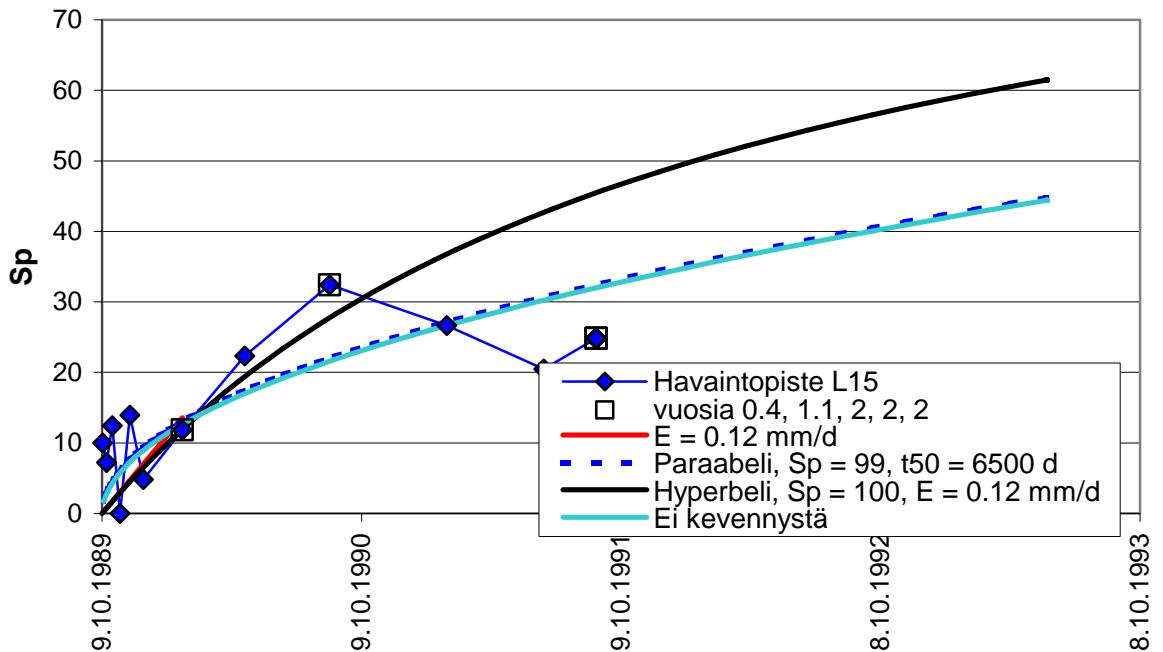
Aika-Painuma kuvaaja



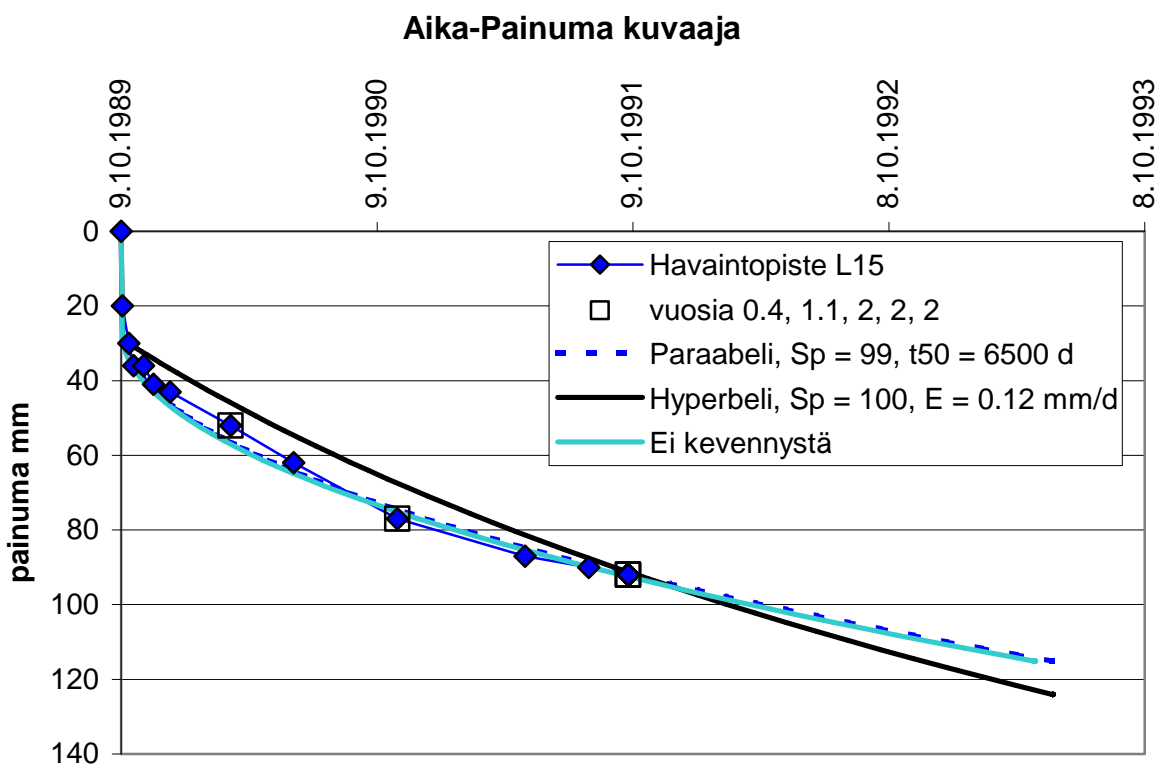
Koepenger, Paimio, 2 v

Havaintopiste L15

● 1-puol. kl	H	w	m (b = 0)	m	alkupai.	t0 (d)	pain. t (a)	tod. t
○ 2-puol. kl	12	70	7.7...13	8	29	2	2	1.98
input				80				
	Sp	t50/E	rs	B	c _v	pain. 1.98	virh. mm	
Paraabeli	99	6500	121	0.066	0.7	92	0	
Hyperbeli	100	0.12	120	0.067		91	-1	



Aika-Painumapotentialiaali kuvaaja

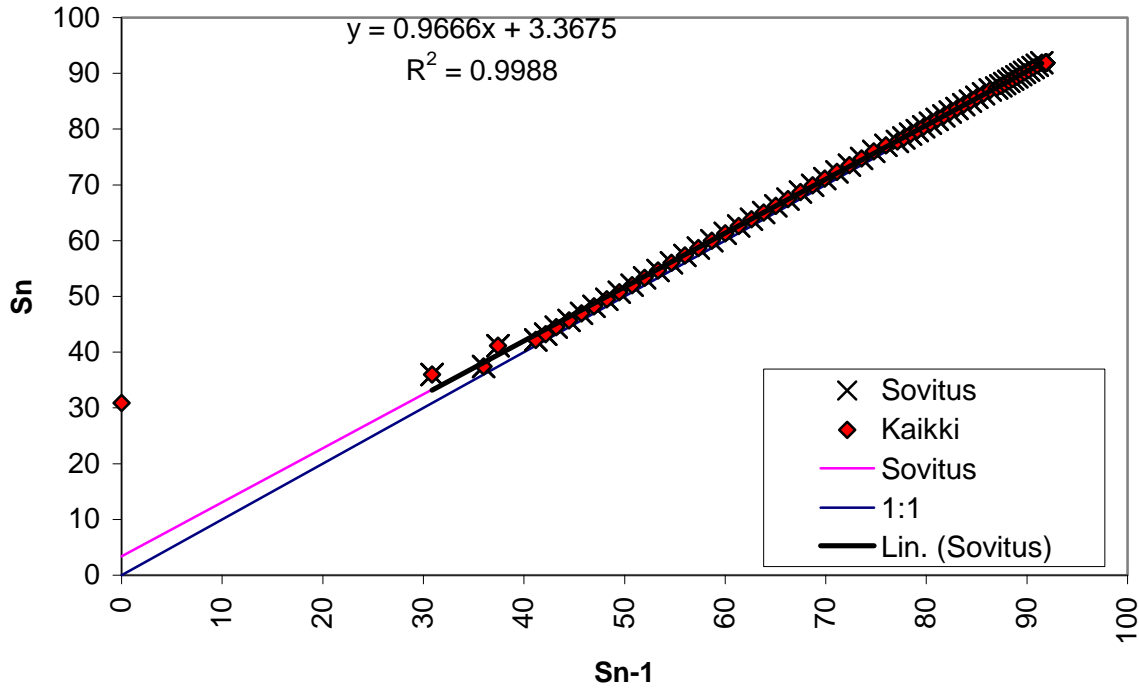


Aika-Painuma kuvaaja

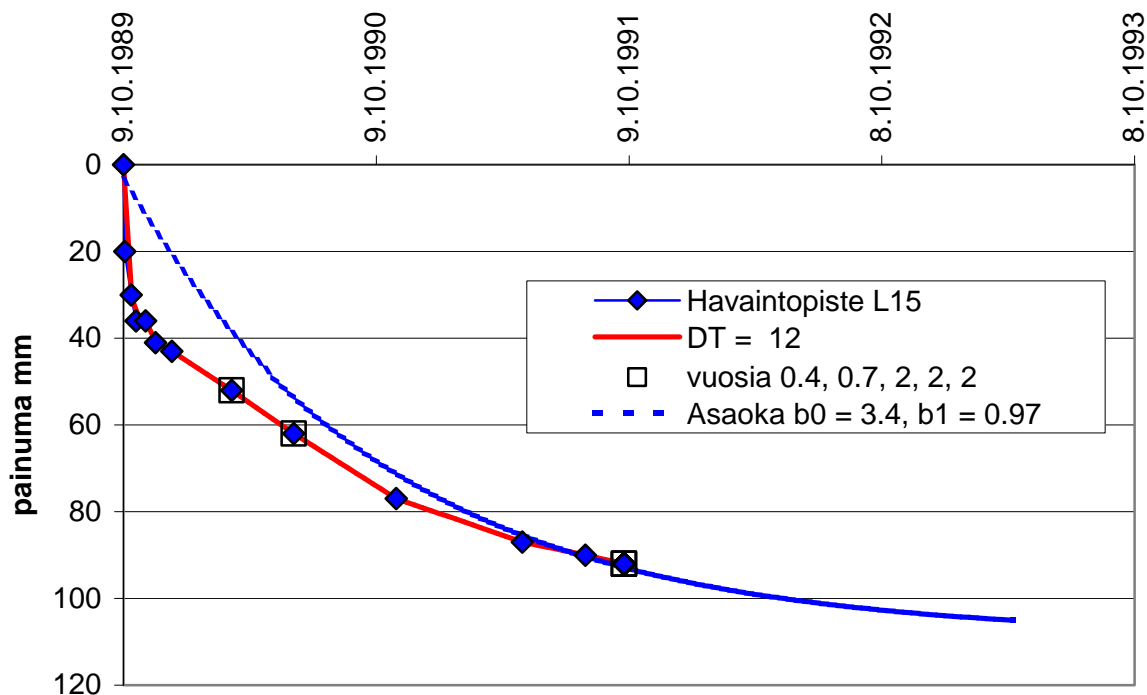


pain. t (a)	tod. t
2	2

input				output			
	β_0	β_1	t	Prim. Pain.		pain2	virh. mm
Asaoka	3.4	0.969	12.00	109		93	ei havaint.
	3.4	0.969	12.00				



Aika-Painuma kuvaaja





pain. t (a)

tod. t

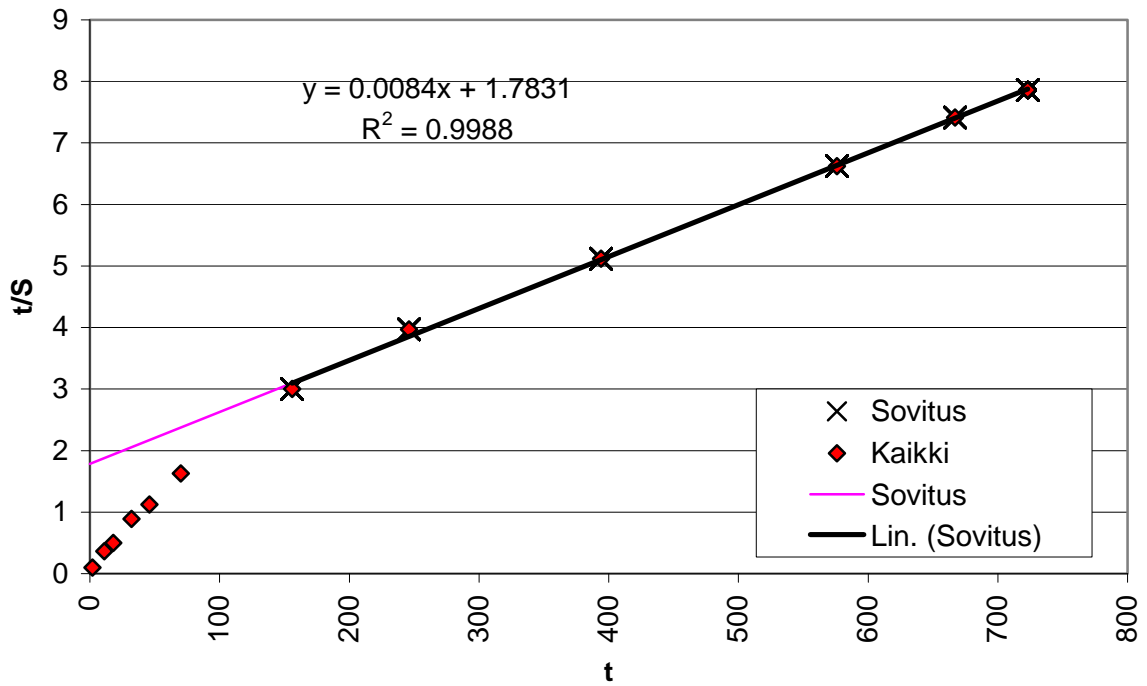
2

1.98

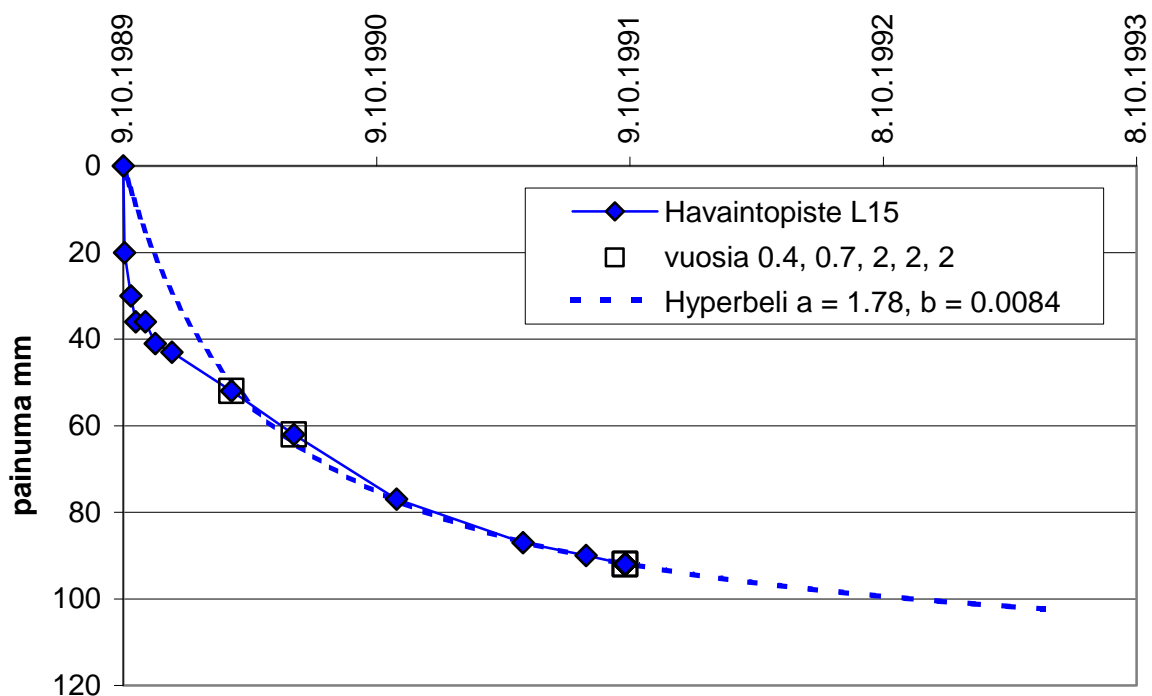
input

output

	a	b	Painuma	pain1.98	virh. mm
Hyperbeli	1.78	8.43E-03	119	92	0



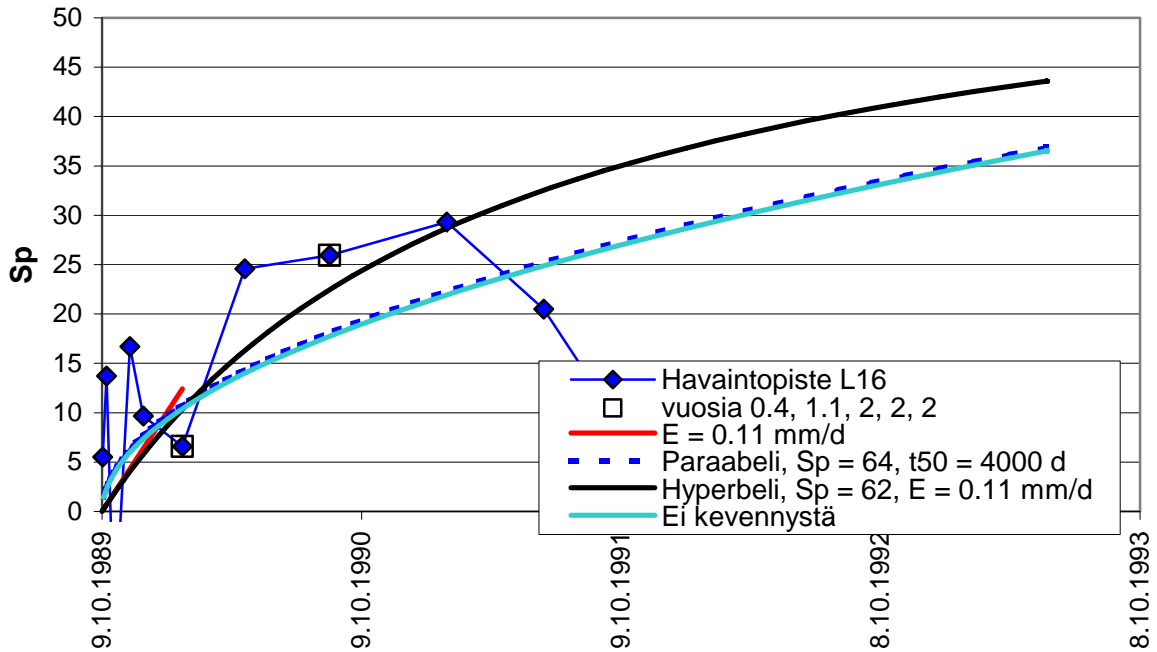
Aika-Painuma kuvaaja



Koepenger, Paimio, 2 v

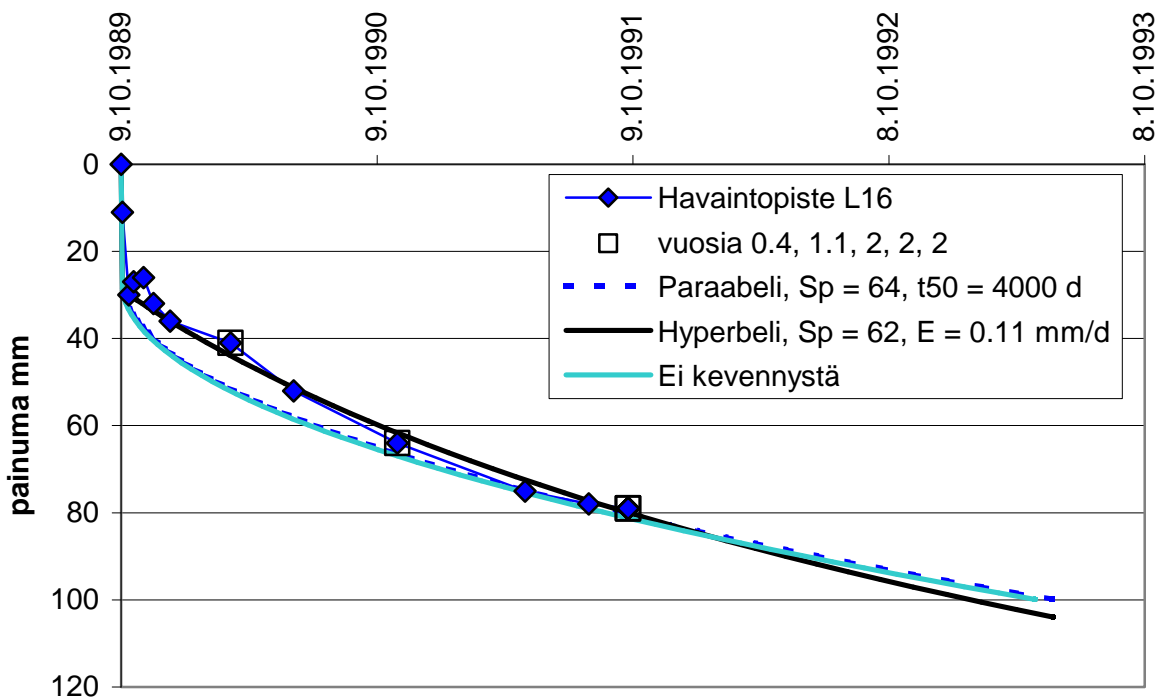
Havaintopiste L16

● 1-puol. kl	H	w	m (b = 0)	m	alkupai.	t0 (d)	pain. t (a)	tod. t
○ 2-puol. kl	12	70	7.7...13	8	29	2	2	1.98
input				80				
	Sp	t50/E	rs	B	c _v	pain. 1.98	virh. mm	
Paraabeli	64	4000	188	0.043	1.2	81	2	
Hyperbeli	62	0.11	193	0.041		80	1	

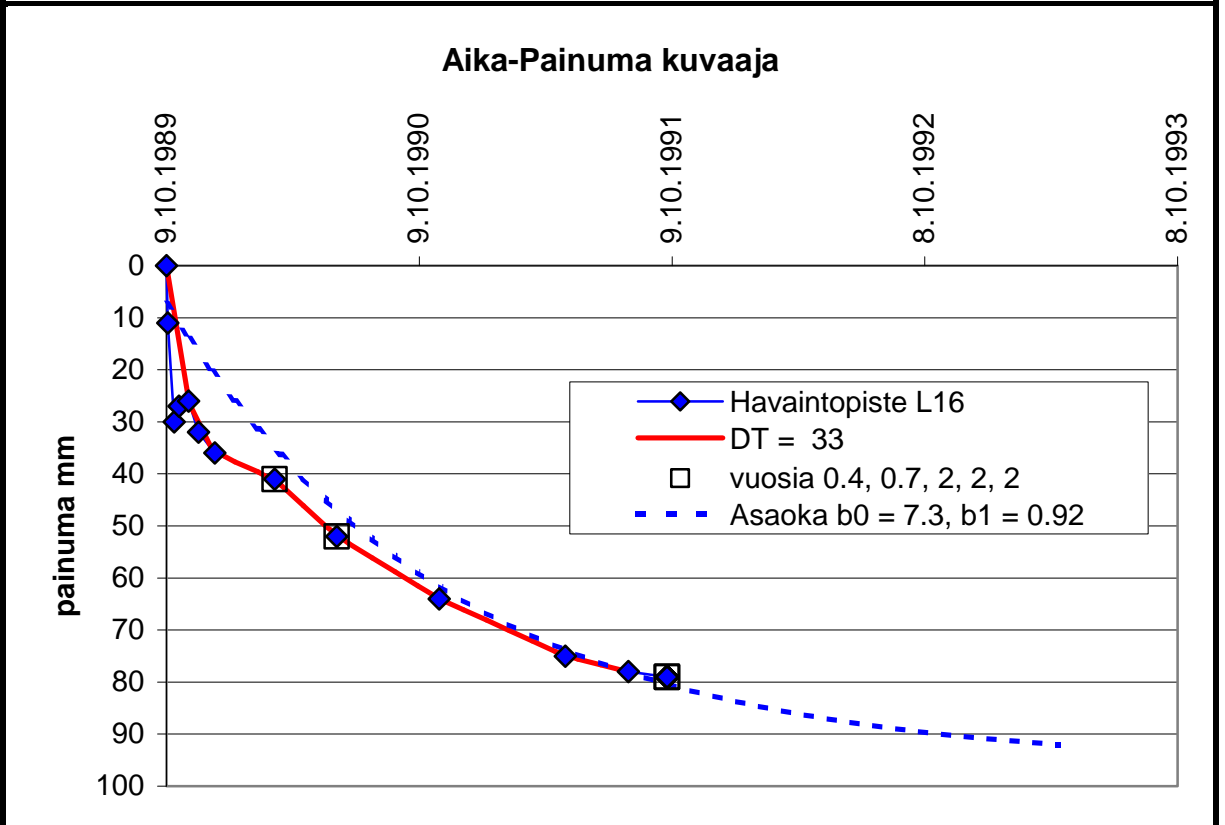
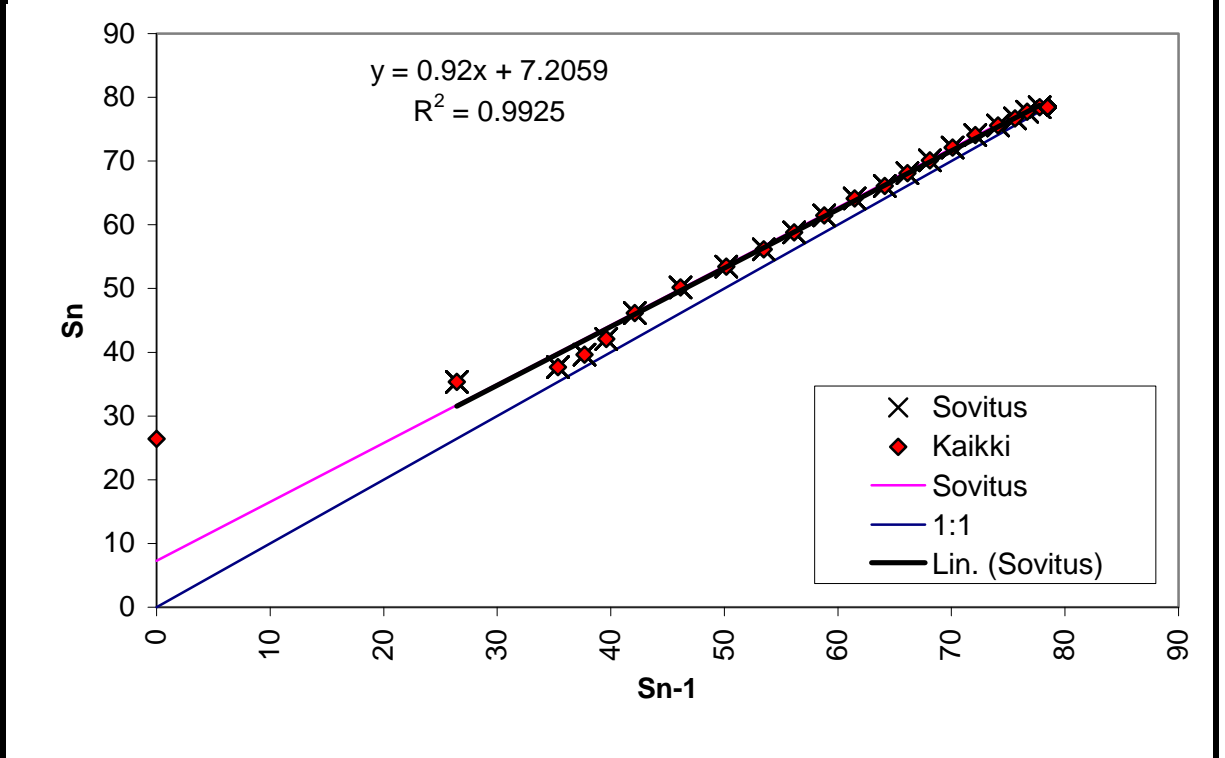


Aika-Painumapotentialiaali kuvaaja

Aika-Painuma kuvaaja



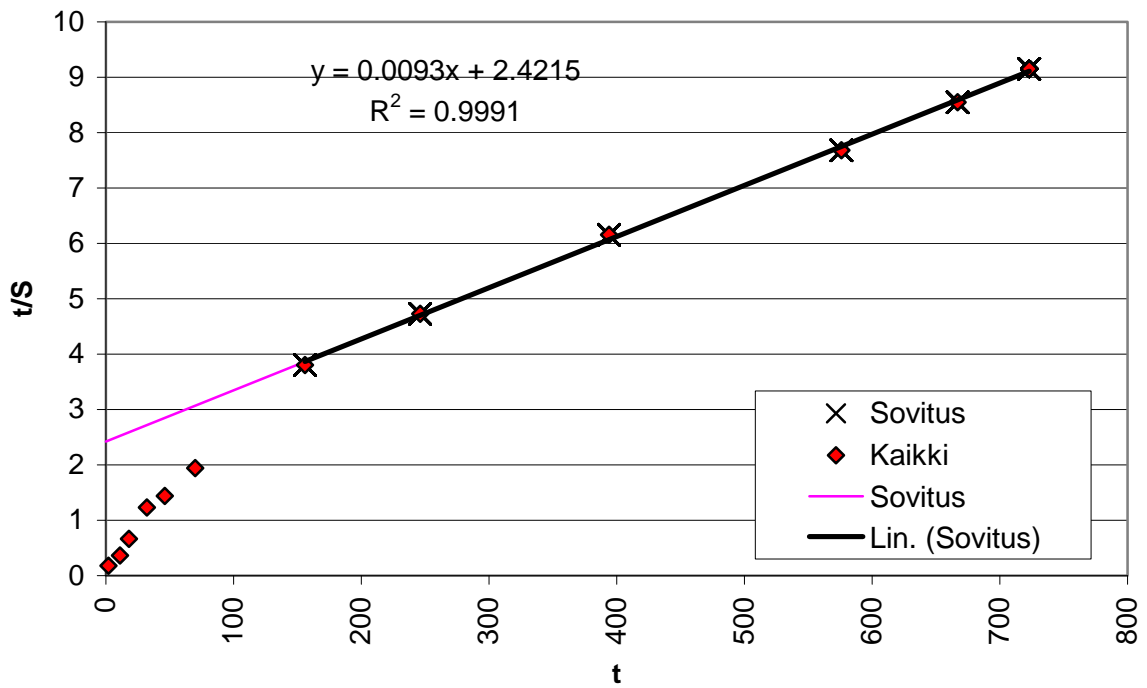
				pain. t (a)	tod. t	
				2	2	
input				output		
	β_0	β_1	t	Prim. Pain.	pain2	virh. mm
Asaoka	7.3	0.924	33.00	96	80	ei havaint.
	7.3	0.924	33.00			



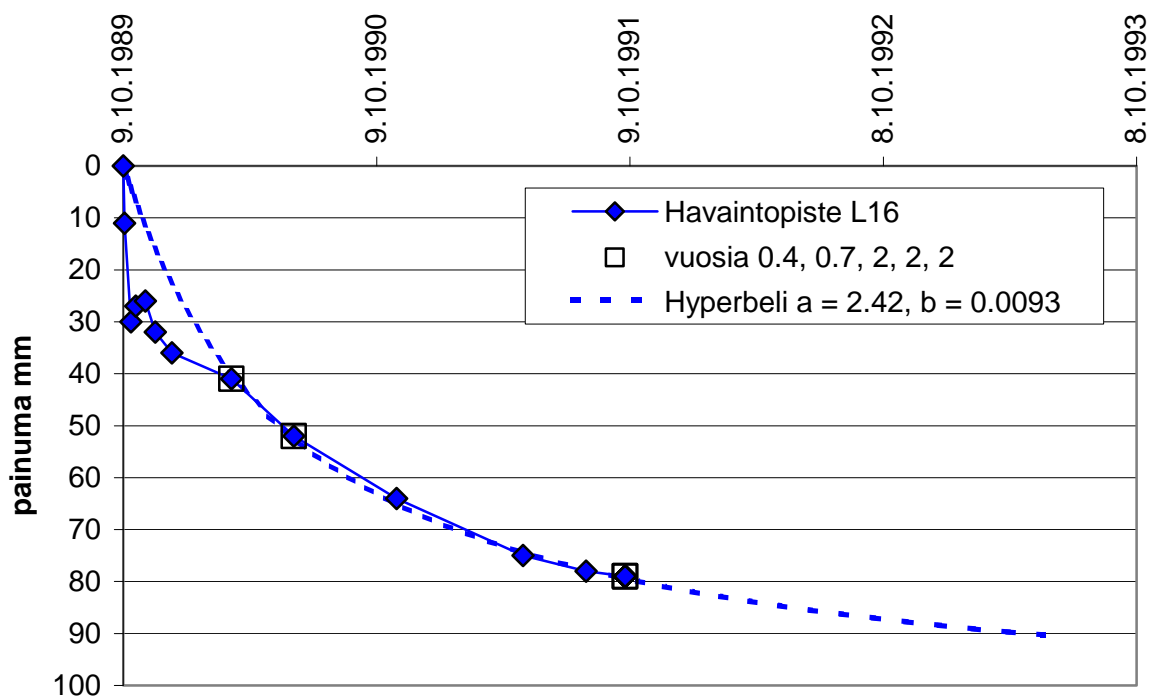


pain. t (a)	tod. t
2	1.98

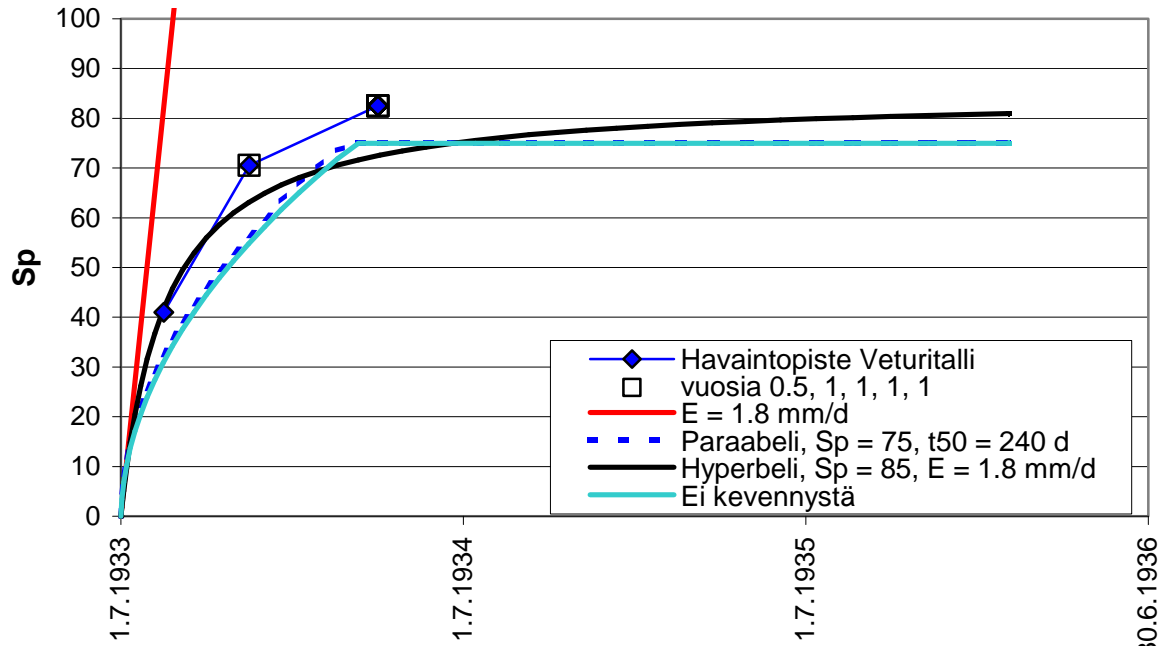
input			output			
	a	b	Painuma		pain1.98	virh. mm
Hyperbeli	2.42	9.25E-03	108		79	0



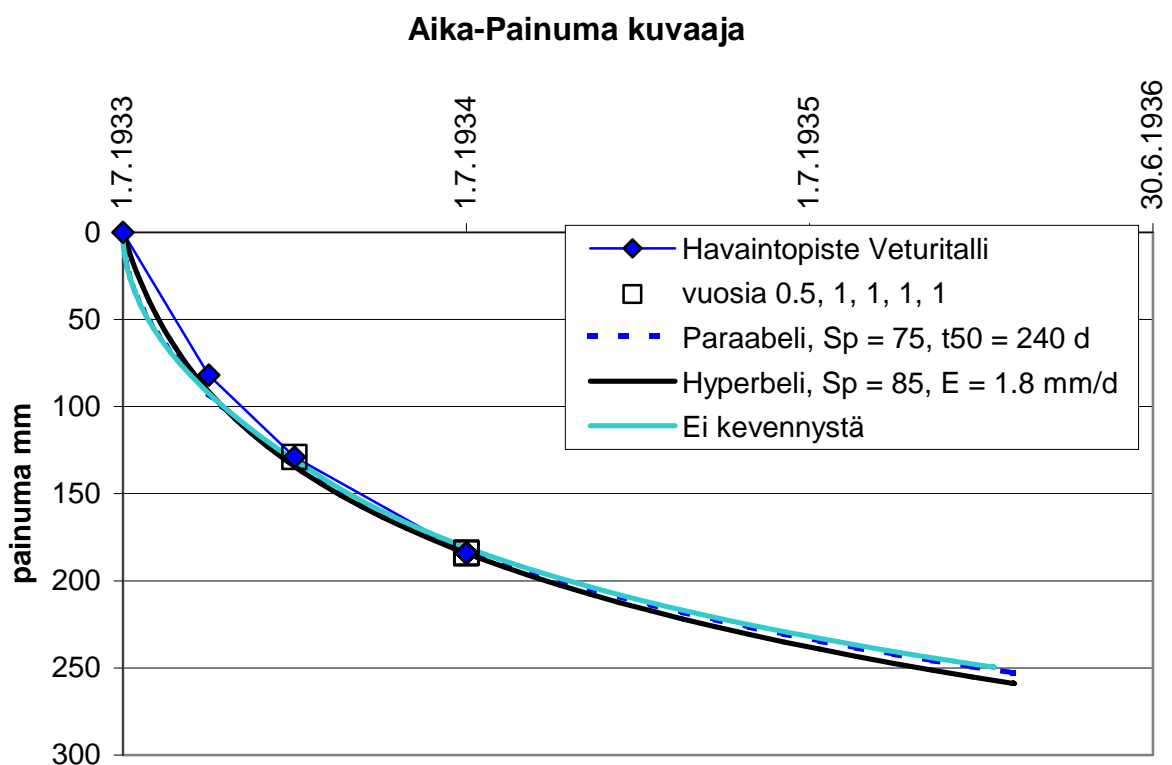
Aika-Painuma kuvaaja



Painumaennuste		Painumapotentiaali				LIITE VI / s. 1		
Kerava, 1 v						Havaintopiste Veturitalli		▼
○ 1-puol. kl.	H	w	m (b = 0)	m	alkupai.	t0 (d)	pain. t (a)	tod. t
● 2-puol. kl.	10	60	9...15.2	10	0	0	20	20
input				80				
	Sp	t50/E	rs	B	c _v	pain. 20	virh. mm	
Paraabeli	75	240	133	0.075	7.5	406	ei havaint.	
Hyperbeli	85	1.80	118	0.085		429	ei havaint.	

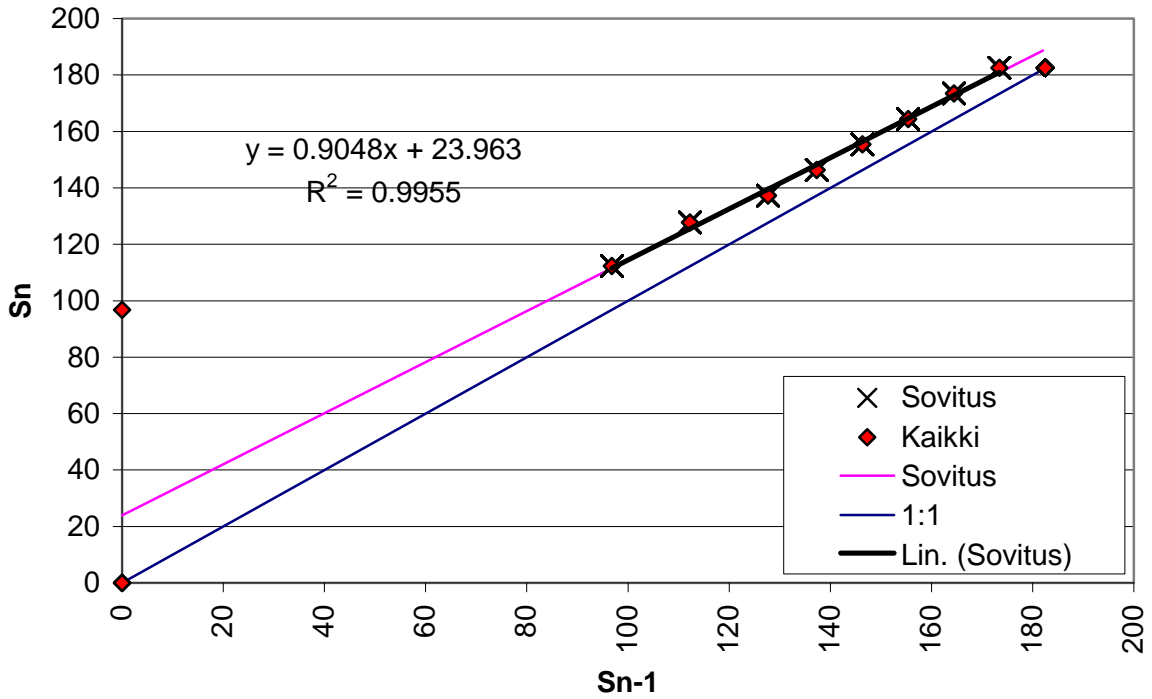


Aika-Painumapotentiaali kuvaaja

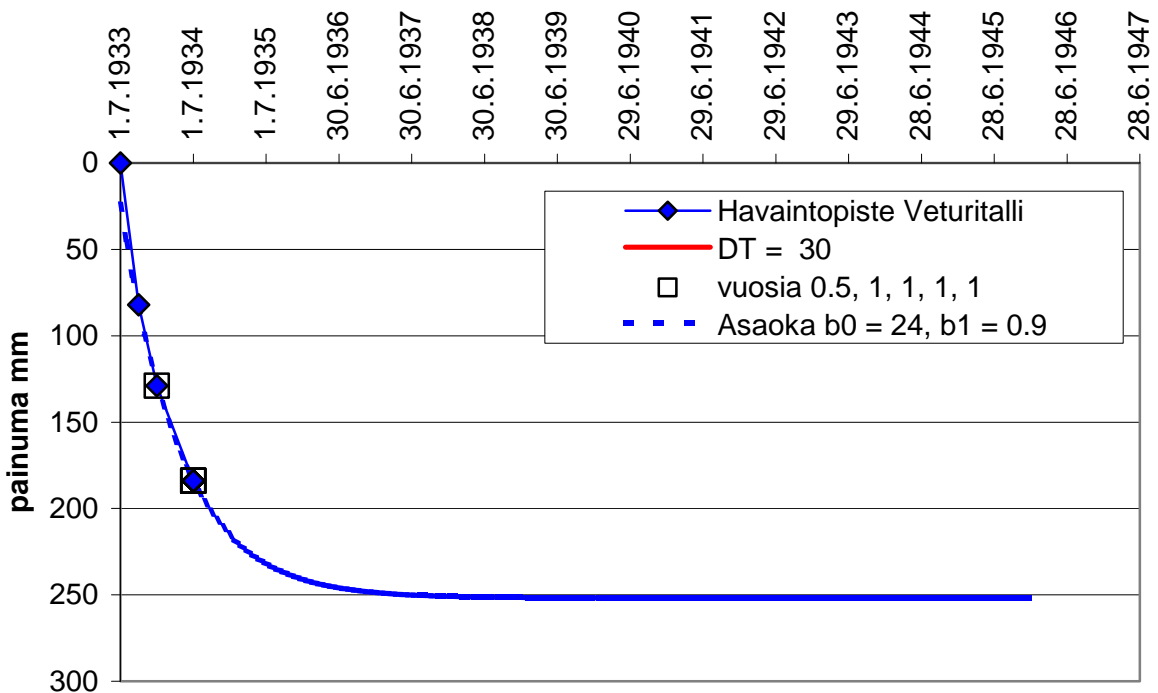


Aika-Painuma kuvaaja

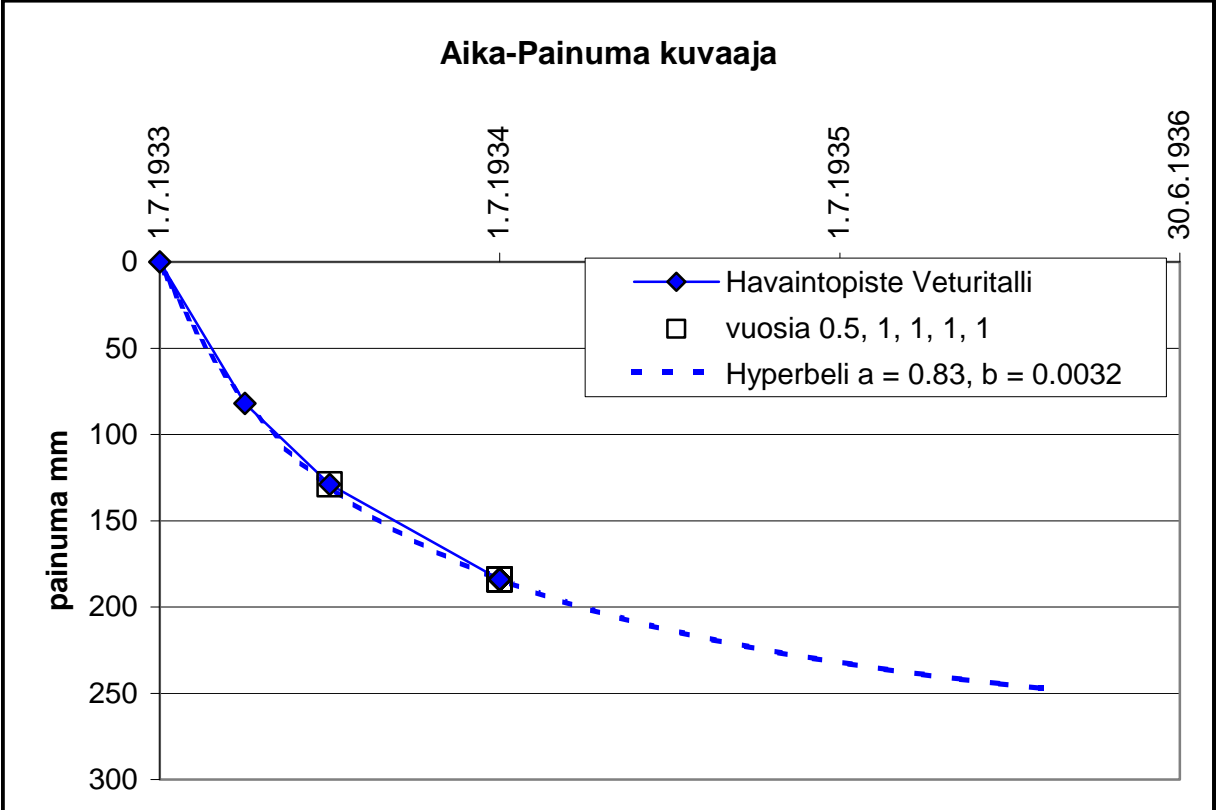
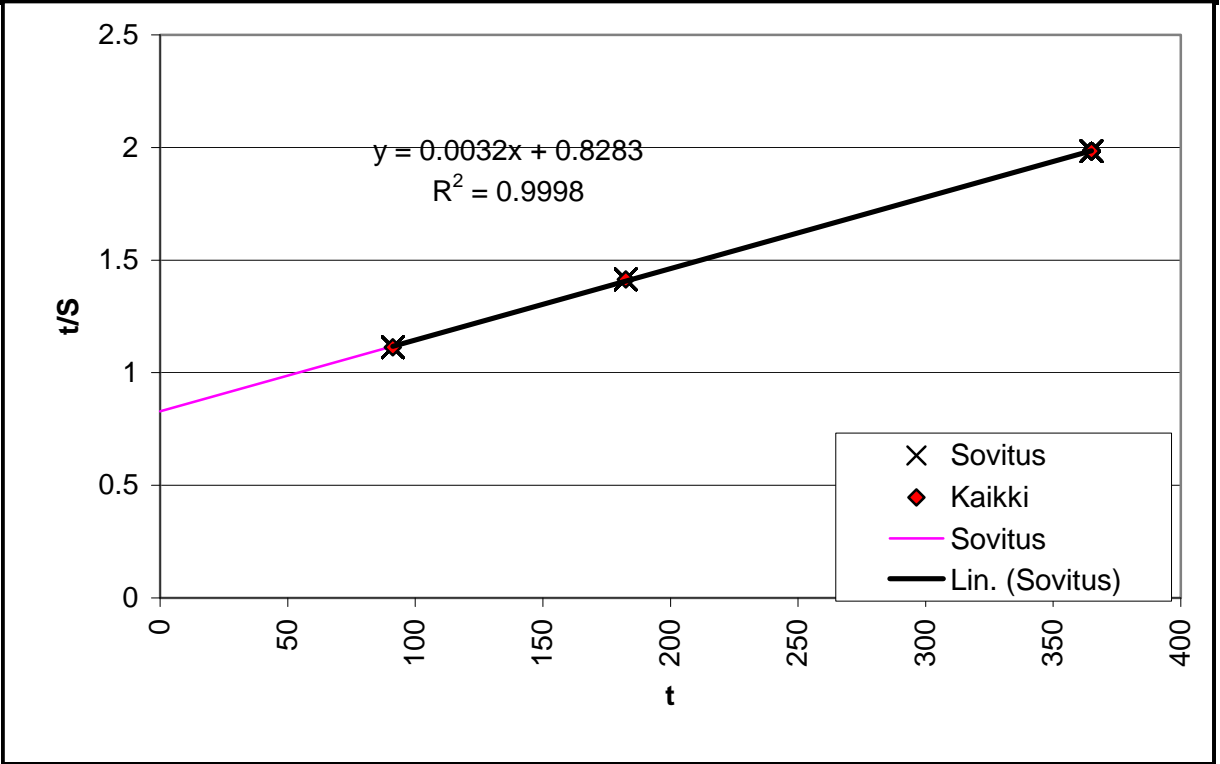
				pain. t (a)	tod. t	
				20	19.97	
input			output			
	β_0	β_1	t	Prim. Pain.	pain19.97	virh. mm
Asaoka	24.0	0.905	30.00	252	252	ei havaint.
	24.0	0.905	30.00			



Aika-Painuma kuvaaja



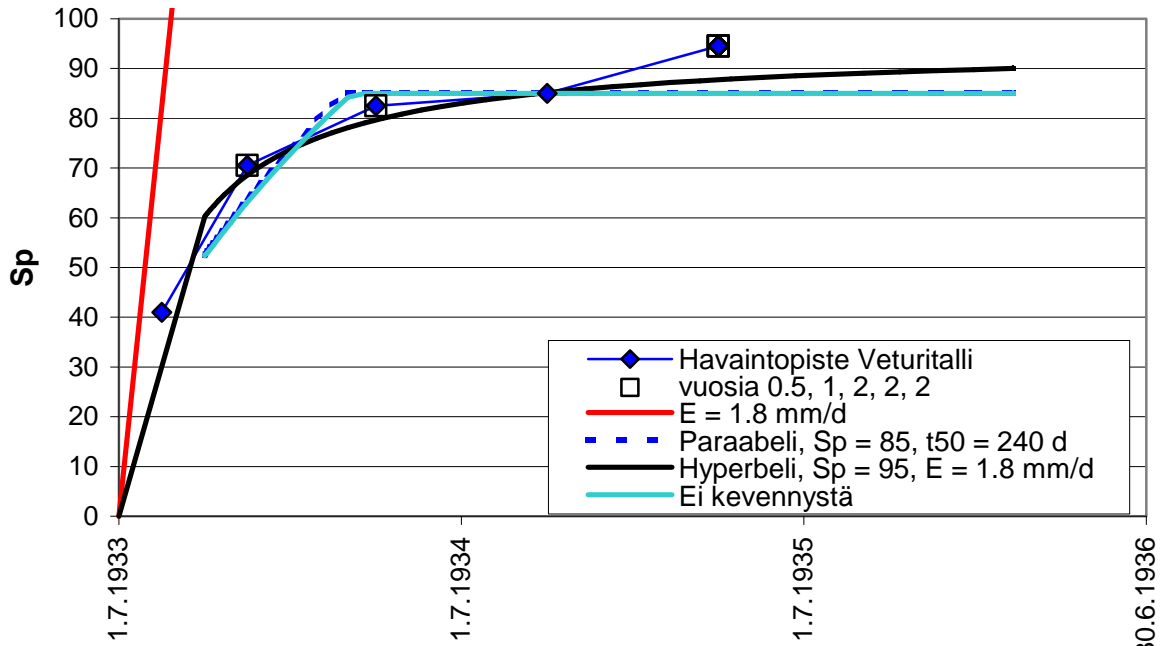
				pain. t (a)	tod. t
				20	20
input			output		
	a	b	Painuma	pain20	virh. mm
Hyperbeli	0.83	3.17E-03	315	304	ei havaint.



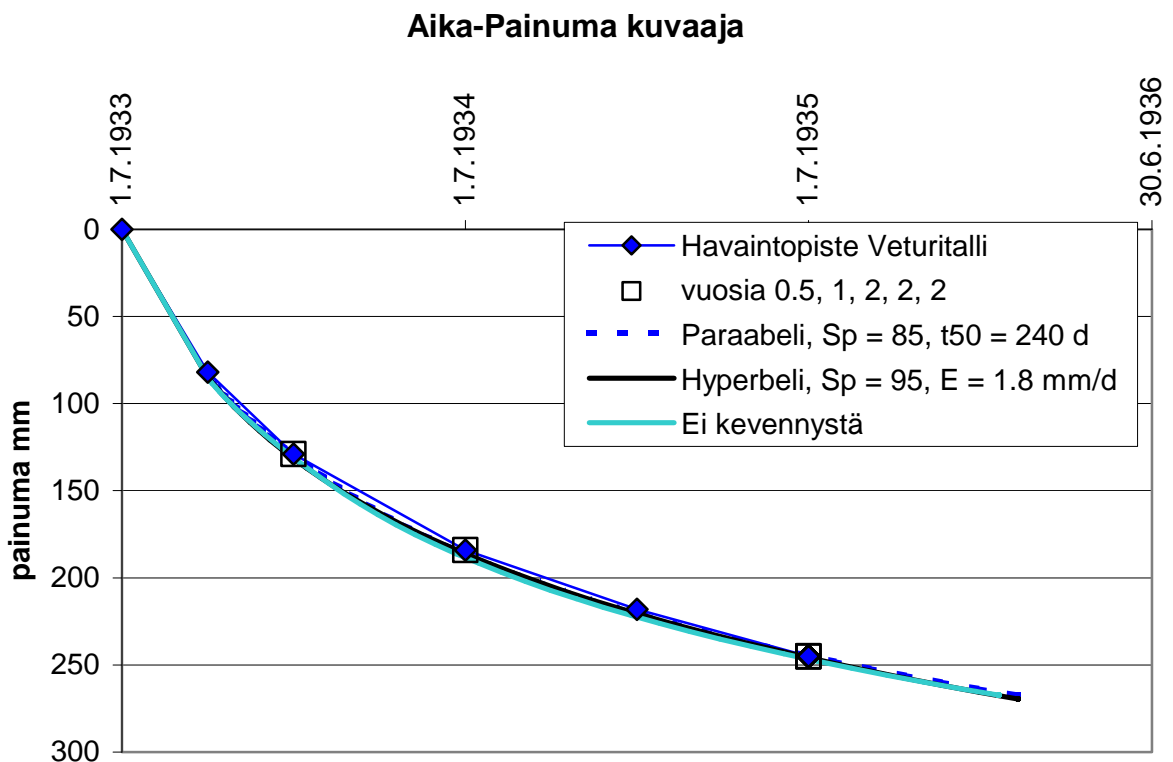
Kerava, 2 v

Havaintopiste Veturitalli

○ 1-puol. kl	H	w	m (b = 0)	m	alkupai.	t0 (d)	pain. t (a)	tod. t
● 2-puol. kl	10	60	9...15.2	10	85	91.25	20	20
input					80			
	Sp	t50/E	rs	B	c _v	pain. 20	virh. mm	
Paraabeli	85	240	118	0.085	7.5	440	ei havaint.	
Hyperbeli	95	1.80	105	0.095		459	ei havaint.	



Aika-Painumapotentialiaali kuvaaja



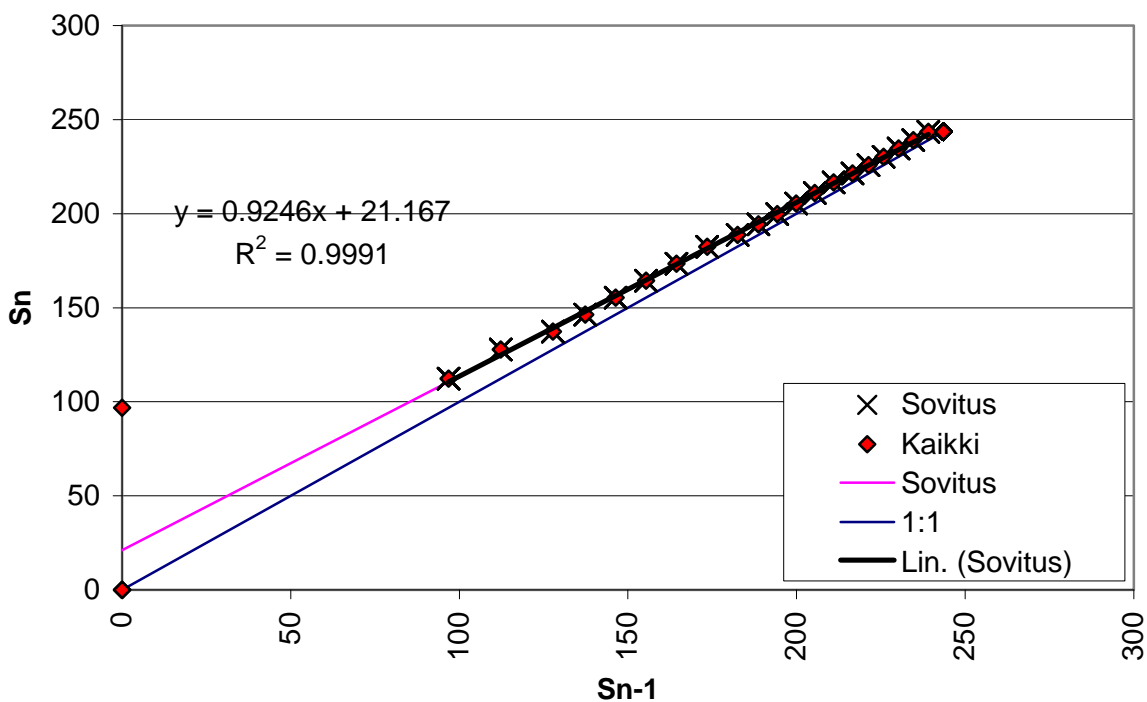
Aika-Painuma kuvaaja

Kerava, 2 v

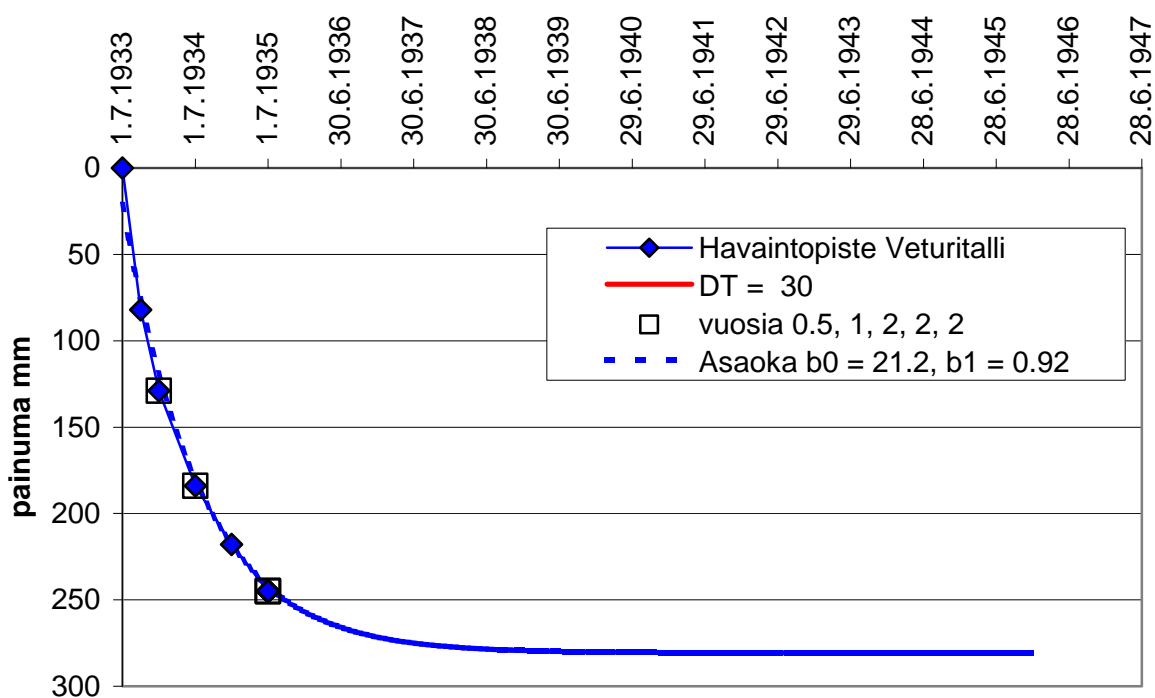
Havaintopiste Veturitalli



				pain. t (a)	tod. t	
				20	19.97	
input			output			
	β_0	β_1	t	Prim. Pain.	pain19.97	virh. mm
Asaoka	21.2	0.925	30.00	281	281	ei havaint.
	21.2	0.925	30.00			



Aika-Painuma kuvaaja

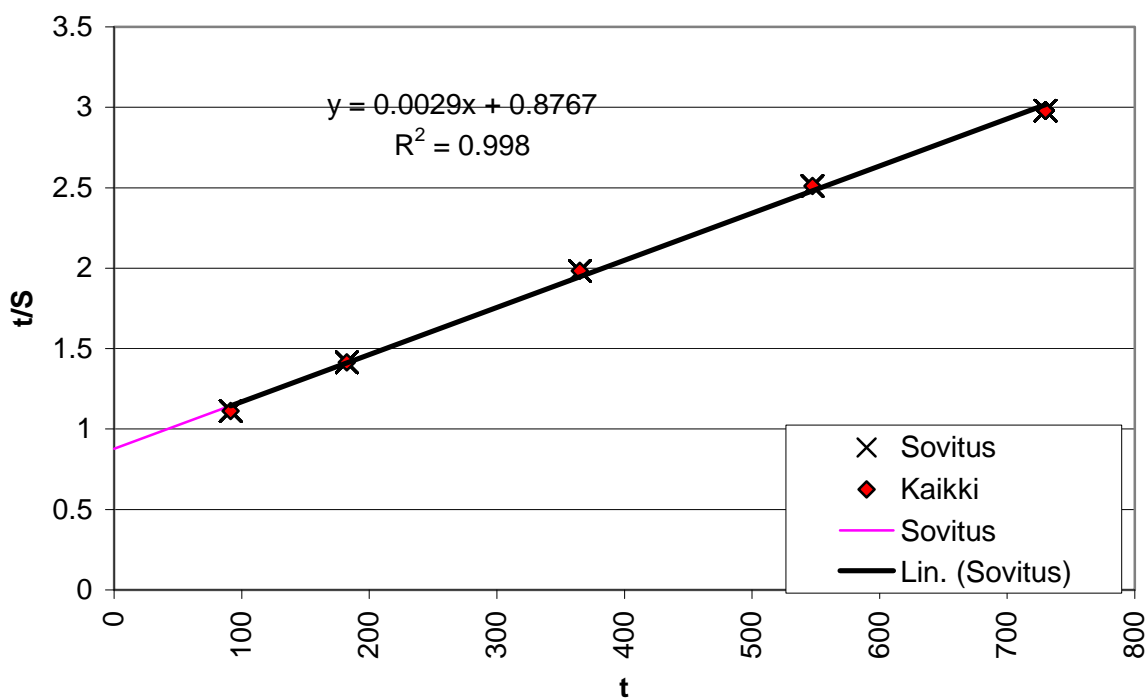


Kerava, 2 v

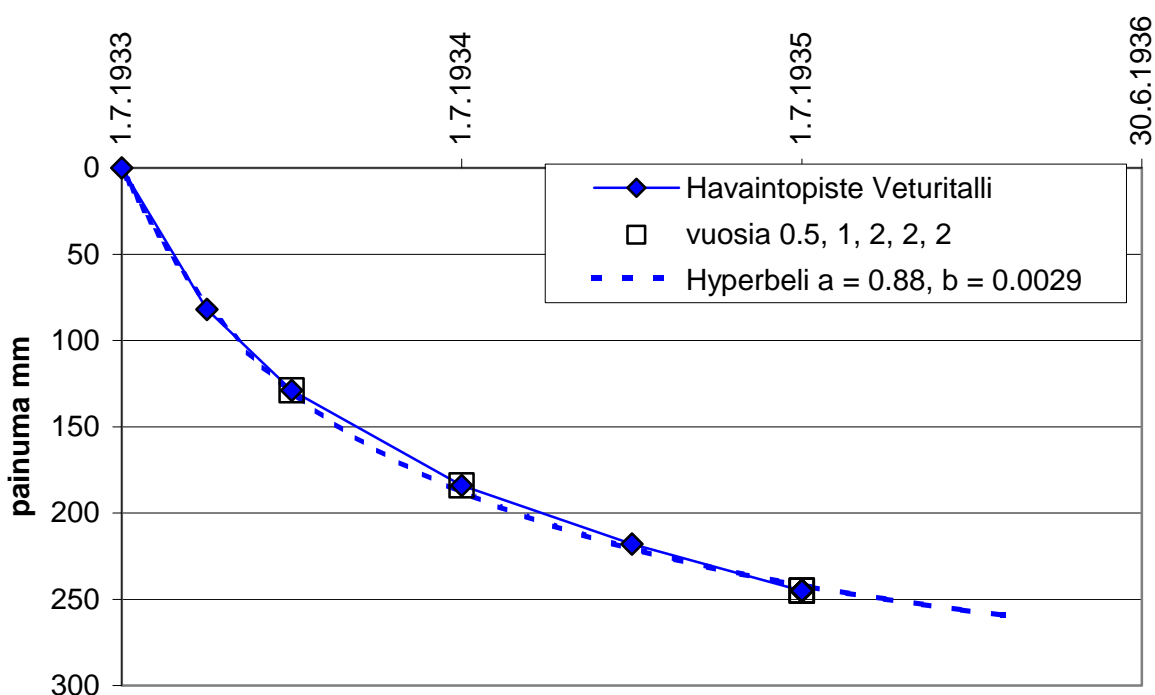
Havaintopiste Veturitalli



				pain. t (a)	tod. t
				20	20
input			output		
	a	b	Painuma	virh. mm	
Hyperbeli	0.88	2.93E-03	341	328	ei havaint.



Aika-Painuma kuvaaja



Painumaennuste

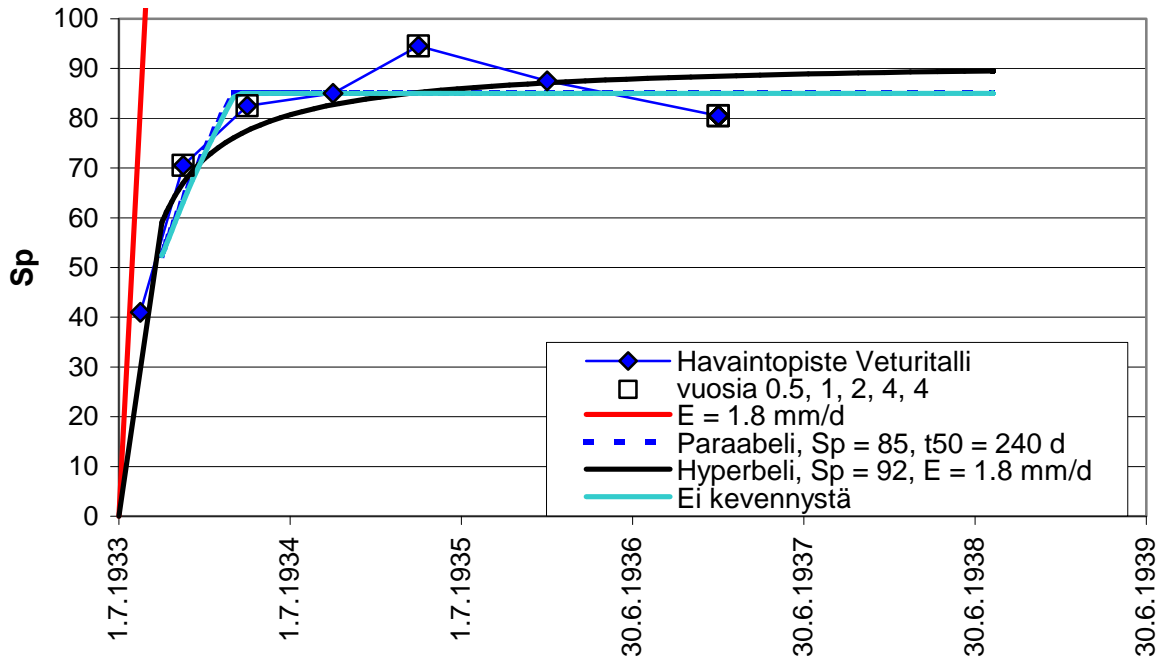
Painumapotentiaali

LIITE VI / s. 7

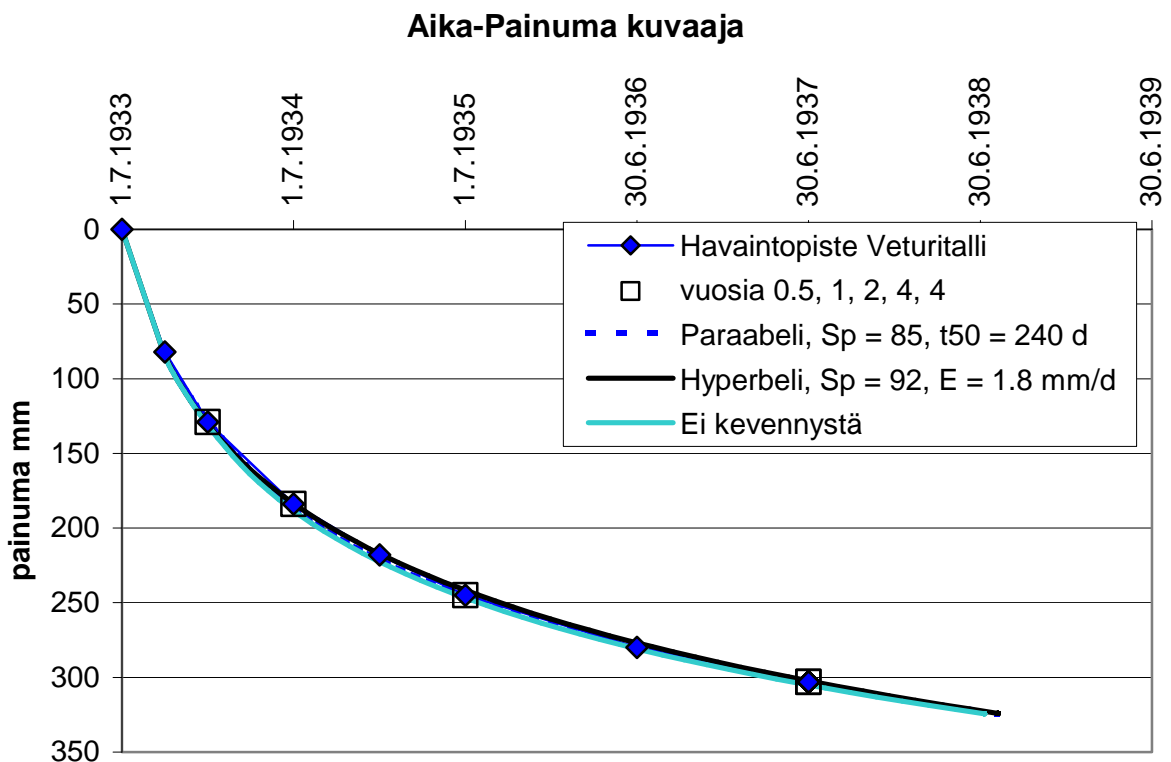
Kerava, 4 v

Havaintopiste Veturitalli

○ 1-puol. kl	H	w	m (b = 0)	m	alkupai.	t0 (d)	pain. t (a)	tod. t
● 2-puol. kl	10	60	9...15.2	10	85	91.25	20	20
input					80			
	Sp	t50/E	rs	B	c _v	pain. 20	virh. mm	
Paraabeli	85	240	118	0.085	7.5	440	ei havaint.	
Hyperbeli	92	1.80	109	0.092		448	ei havaint.	

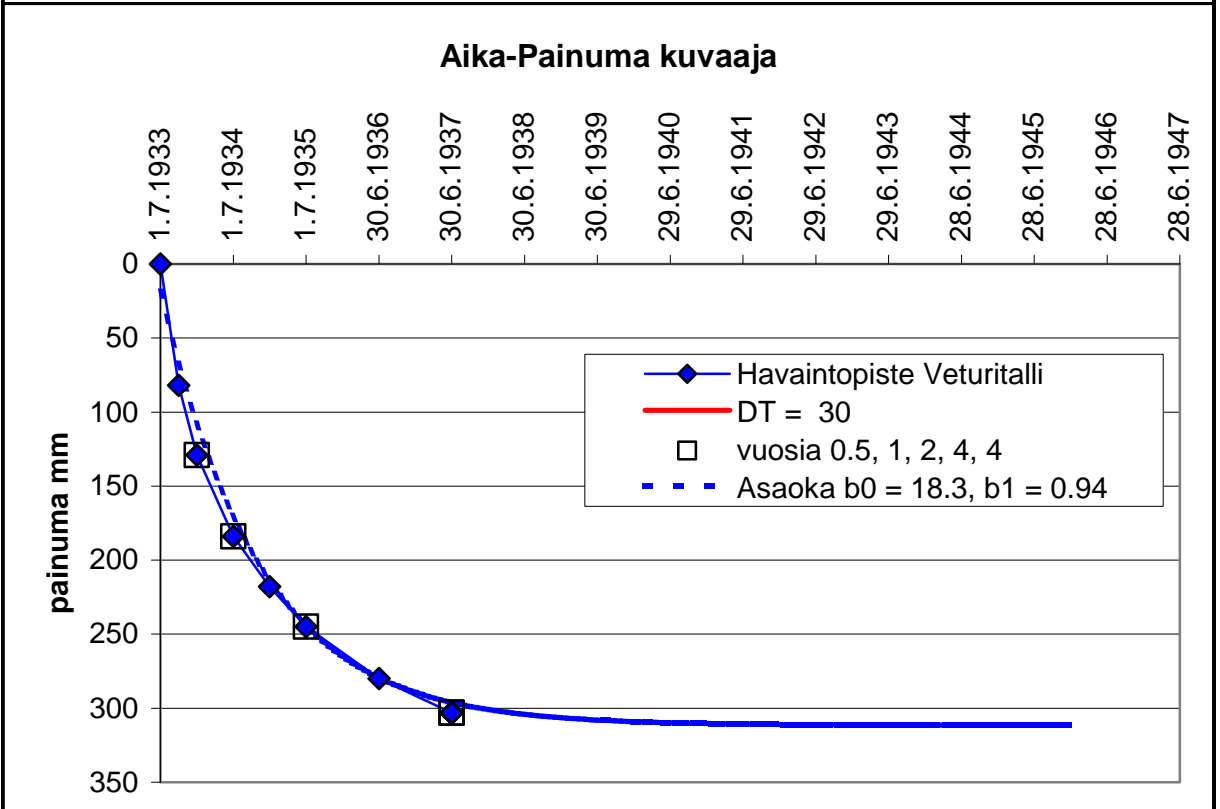
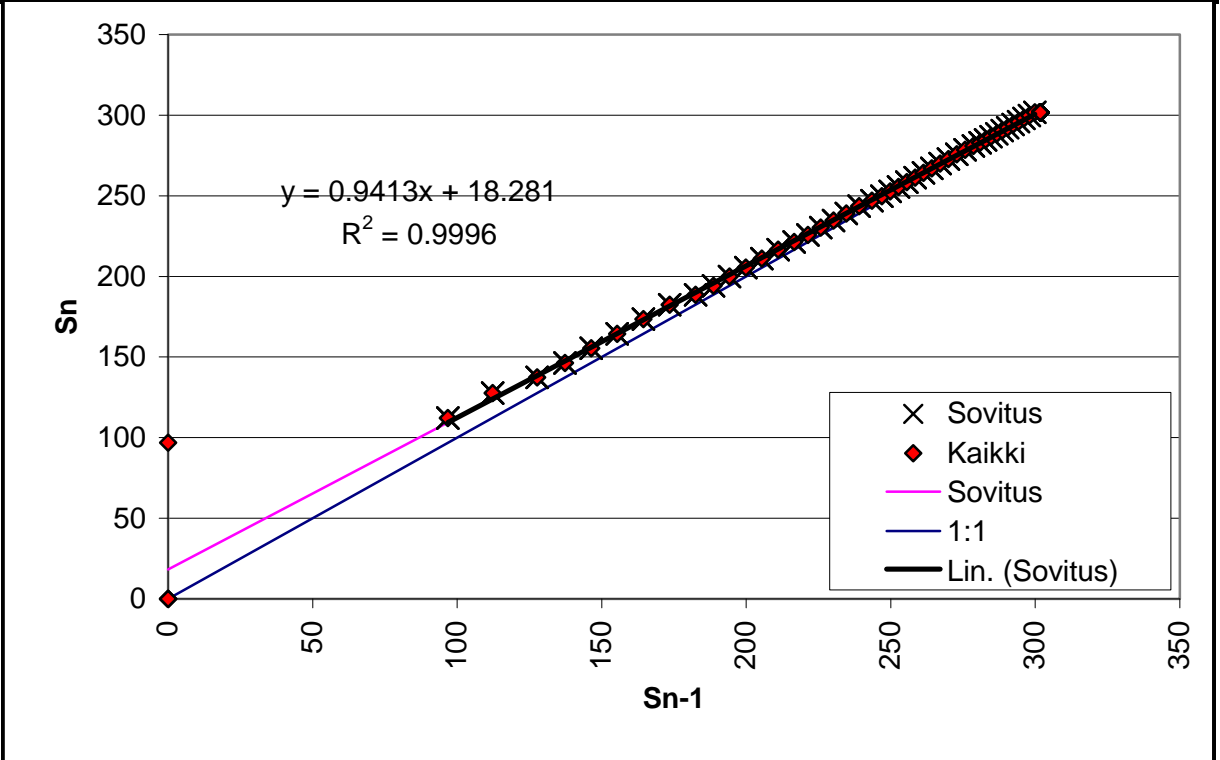


Aika-Painumapotentiaali kuvaaja



Aika-Painuma kuvaaja

				pain. t (a)	tod. t
				20	19.97
input			output		
	β_0	β_1	t	Prim. Pain.	virh. mm
Asaoka	18.3	0.941	30.00	312	ei havaint.
	18.3	0.941	30.00		

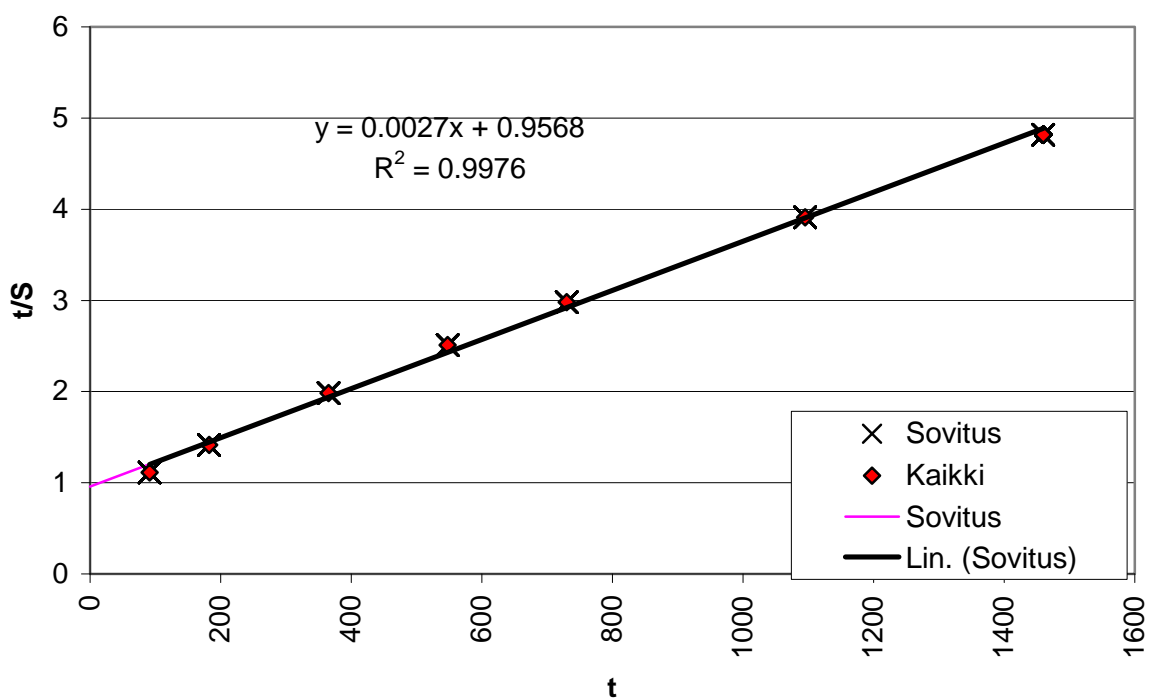


Kerava, 4 v

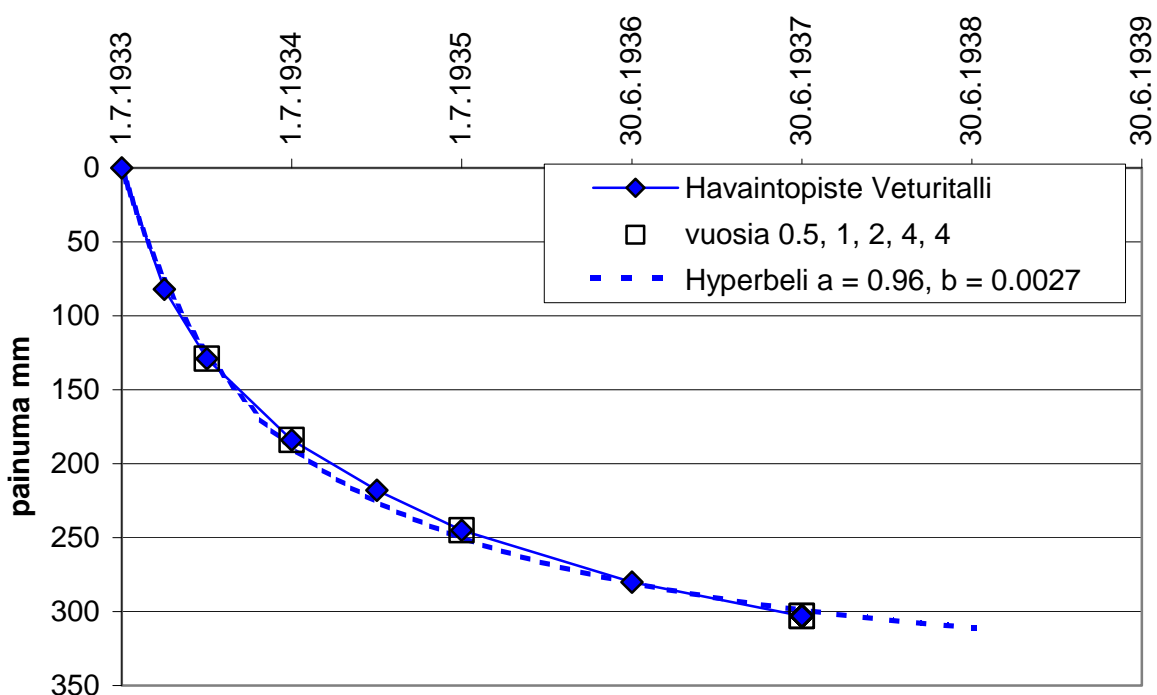
Havaintopiste Veturitalli



				pain. t (a)	tod. t	
				20	20	
input			output			
	a	b	Painuma		pain20	virh. mm
Hyperbeli	0.96	2.69E-03	372		354	ei havaint.



Aika-Painuma kuvaaja



Painumaennuste

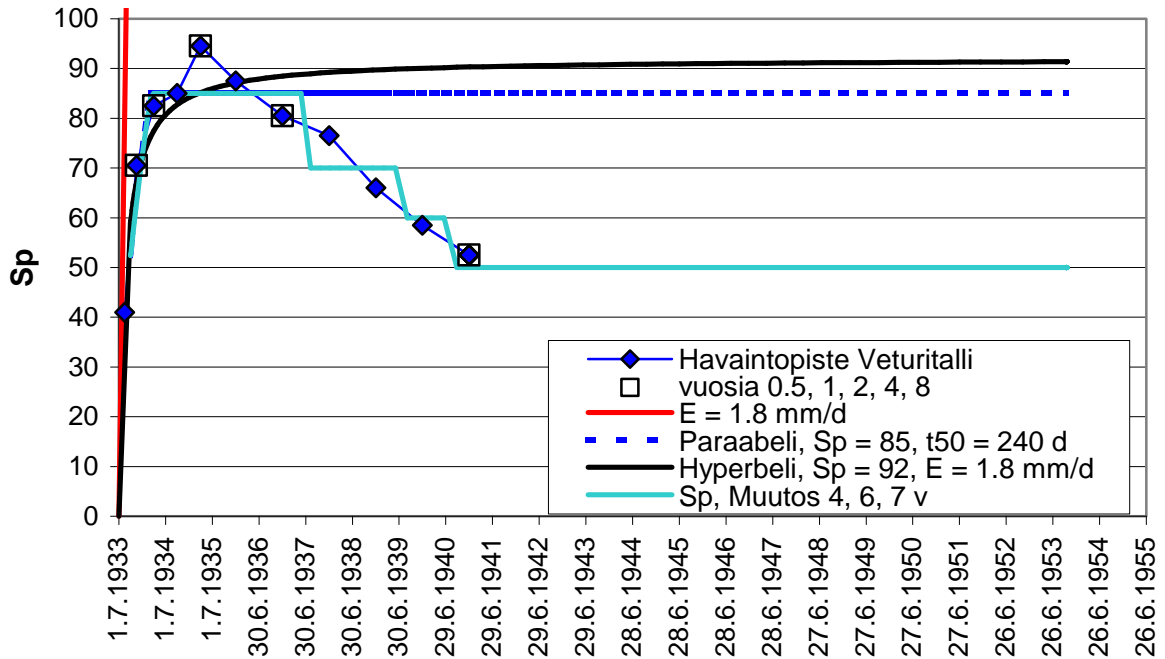
Painumapotentiaali

LIITE VI / s. 10

Kerava, 8 v

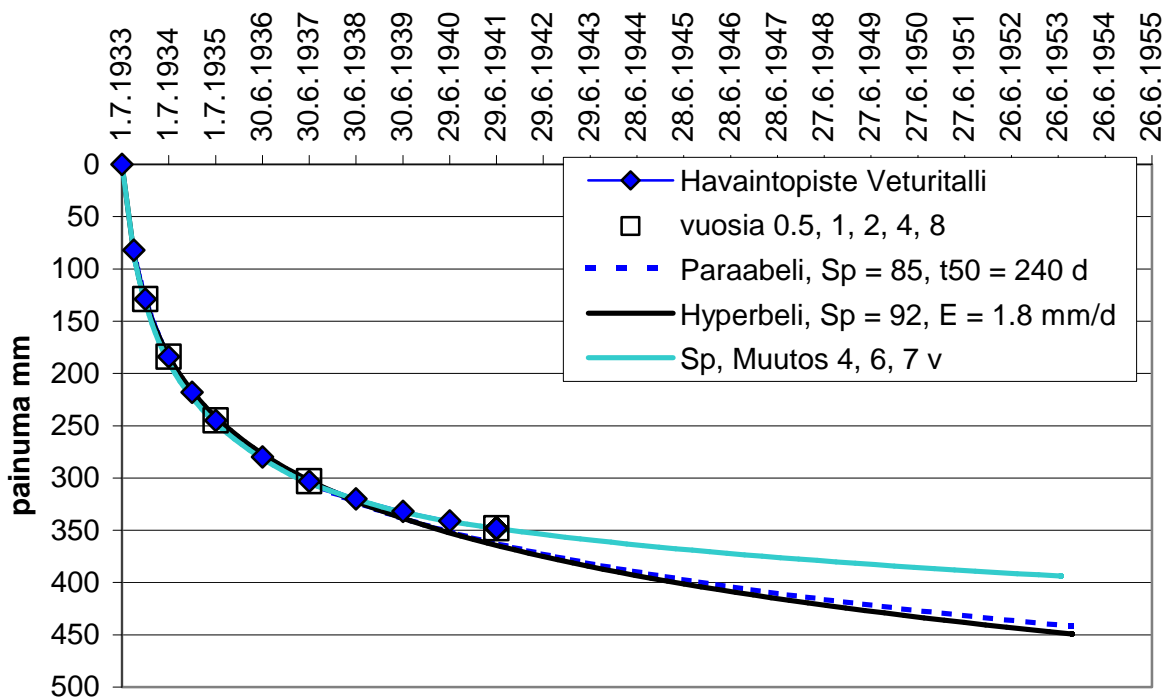
Havaintopiste Veturitalli

○ 1-puol. kl	H	w	m (b = 0)	m	alkupai.	t0 (d)	pain. t (a)	tod. t
● 2-puol. kl	10	60	9...15.2	10	85	91.25	20	20
input				80				
	Sp	t50/E	rs	B	c _v	pain. 20	virh. mm	
Paraabeli	85	240	118	0.085	7.5	393 kev.	ei havaint.	
Hyperbeli	92	1.80	109	0.092		448	ei havaint.	

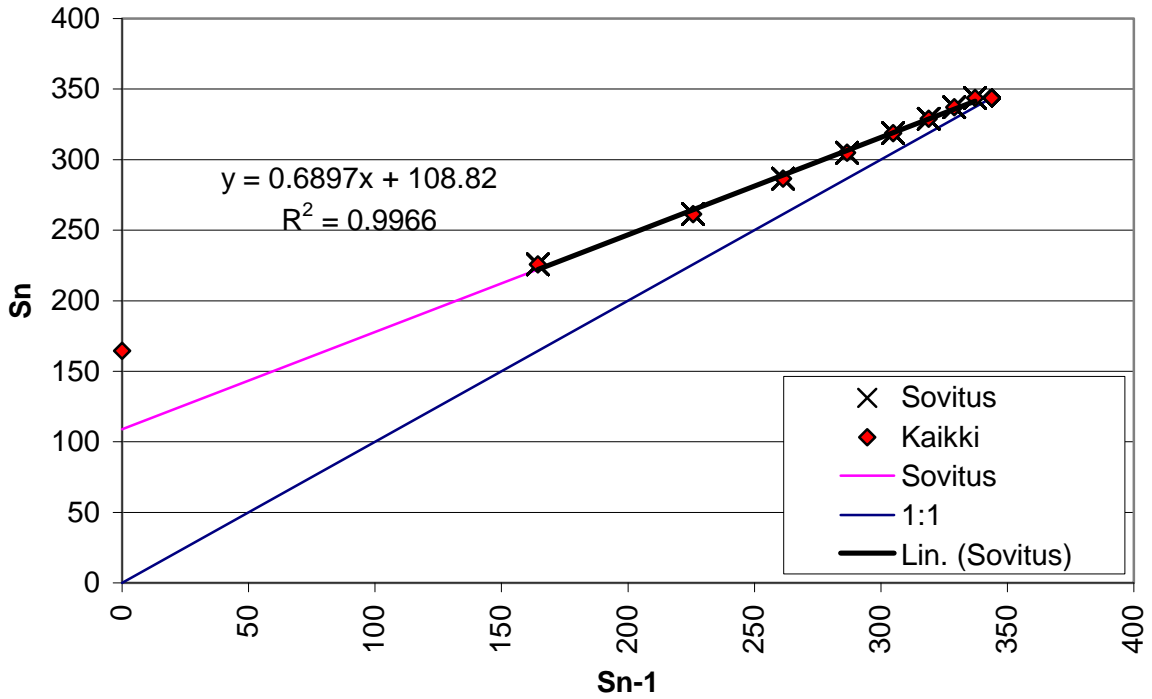


Aika-Painumapotentiaali kuvaaja

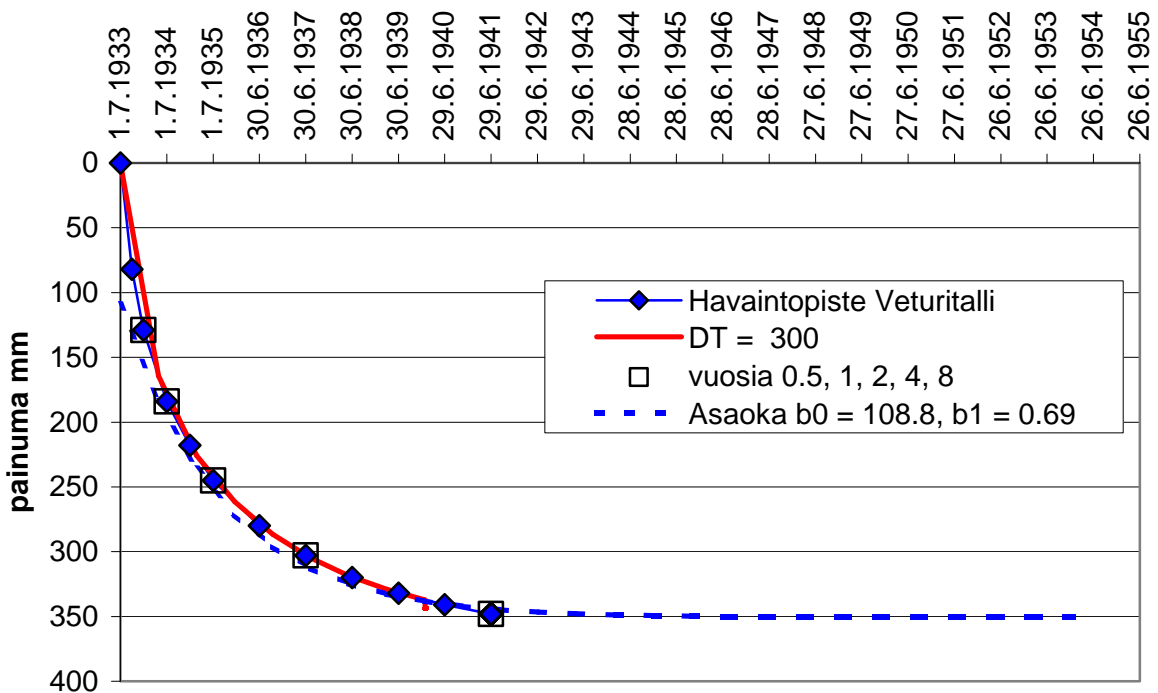
Aika-Painuma kuvaaja



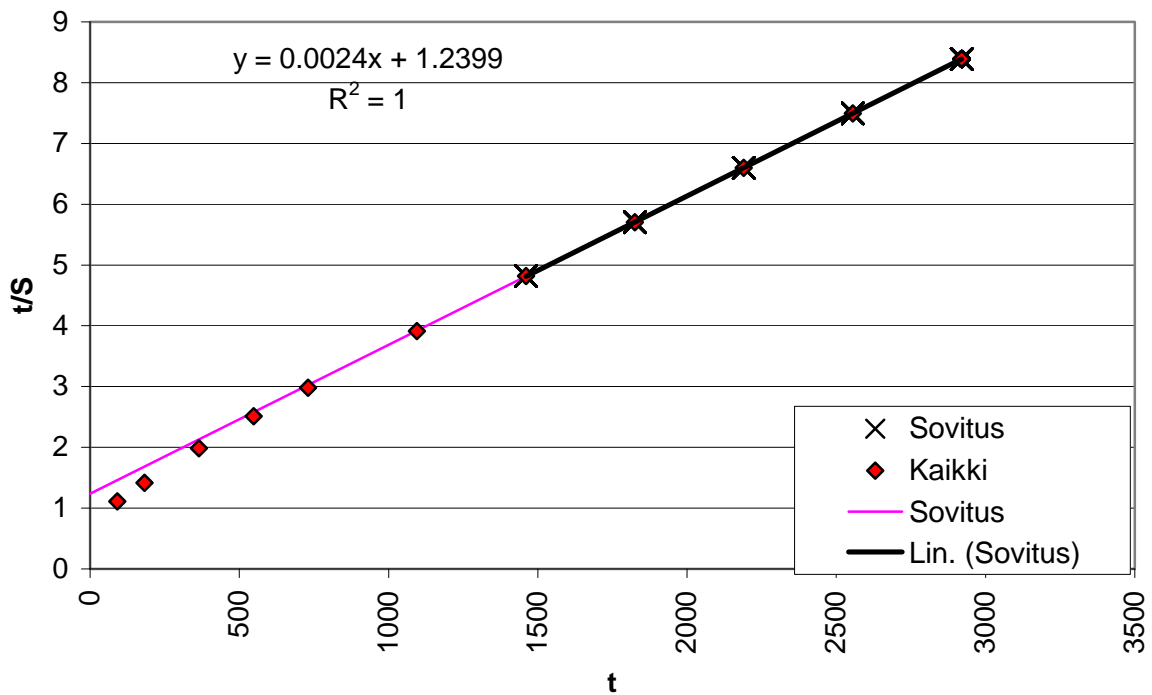
				pain. t (a)	tod. t	
				20	19.73	
input			output			
	β_0	β_1	t	Prim. Pain.	pain19.73	virh. mm
Asaoka	108.8	0.690	300.00	351	351	ei havaint.
	108.8	0.690	300.00			



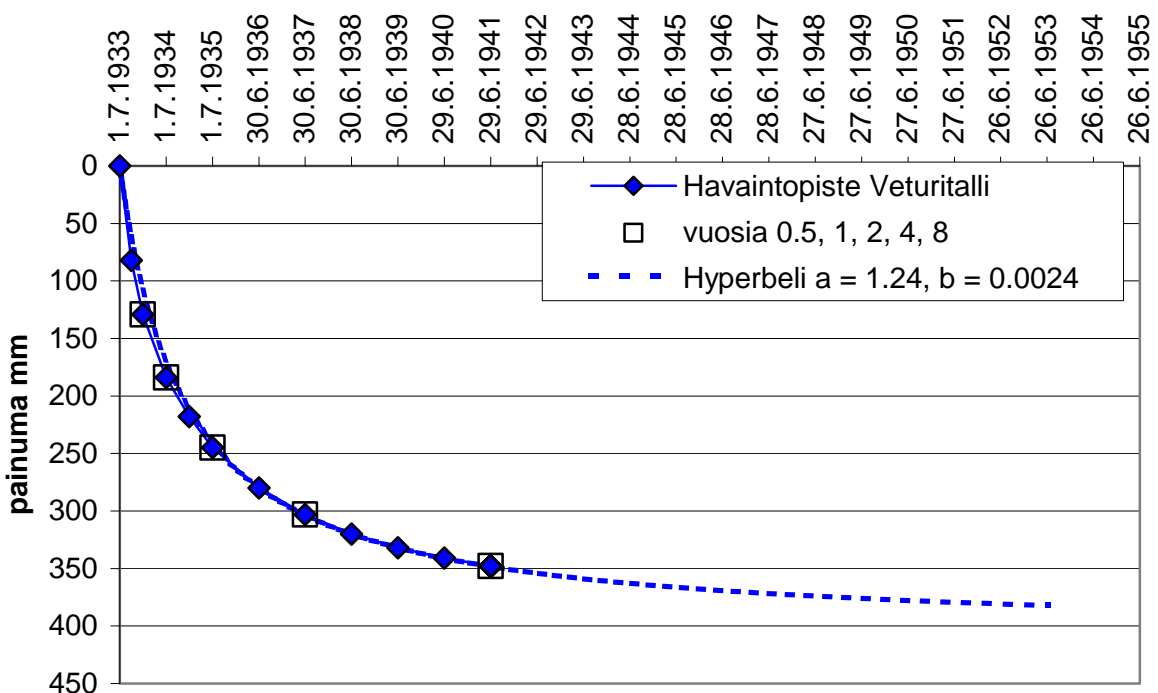
Aika-Painuma kuvaaja



Painumaennuste		Hyperbeli		LIITE VI b / s. 12	
Kerava, 8 v				Havaintopiste Veturitalli	
				pain. t (a)	tod. t
				20	20
input			output		
	a	b	Painuma		virh. mm
Hyperbeli	1.24	2.45E-03	409		ei havaint.



Aika-Painuma kuvaaja

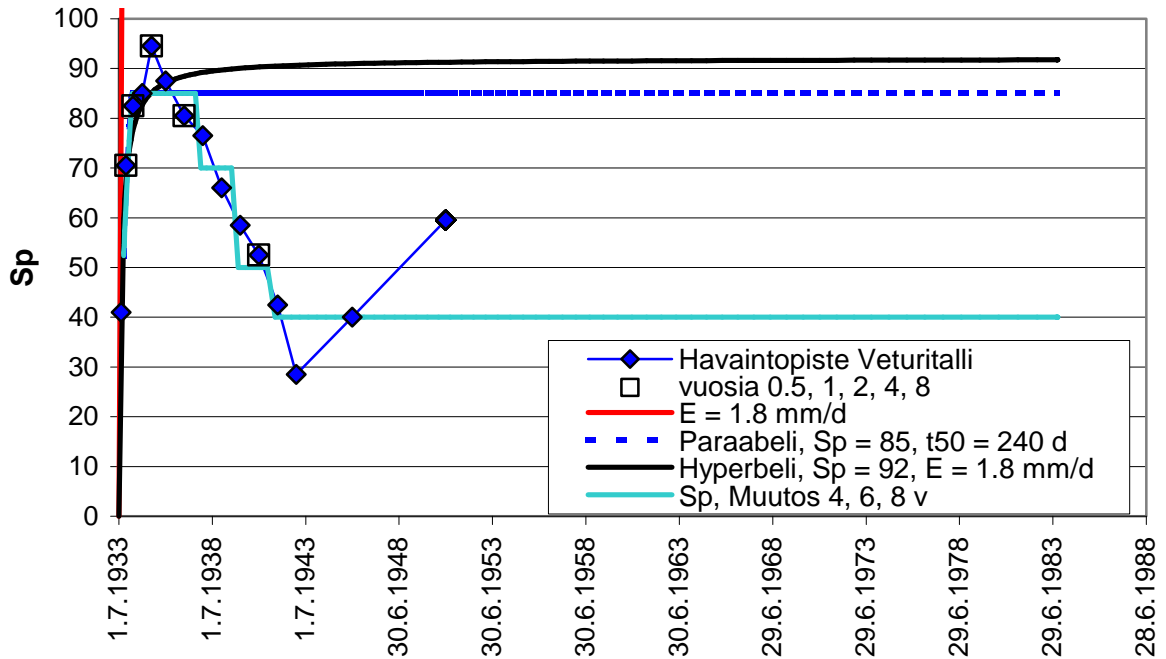


Kerava, 20 v

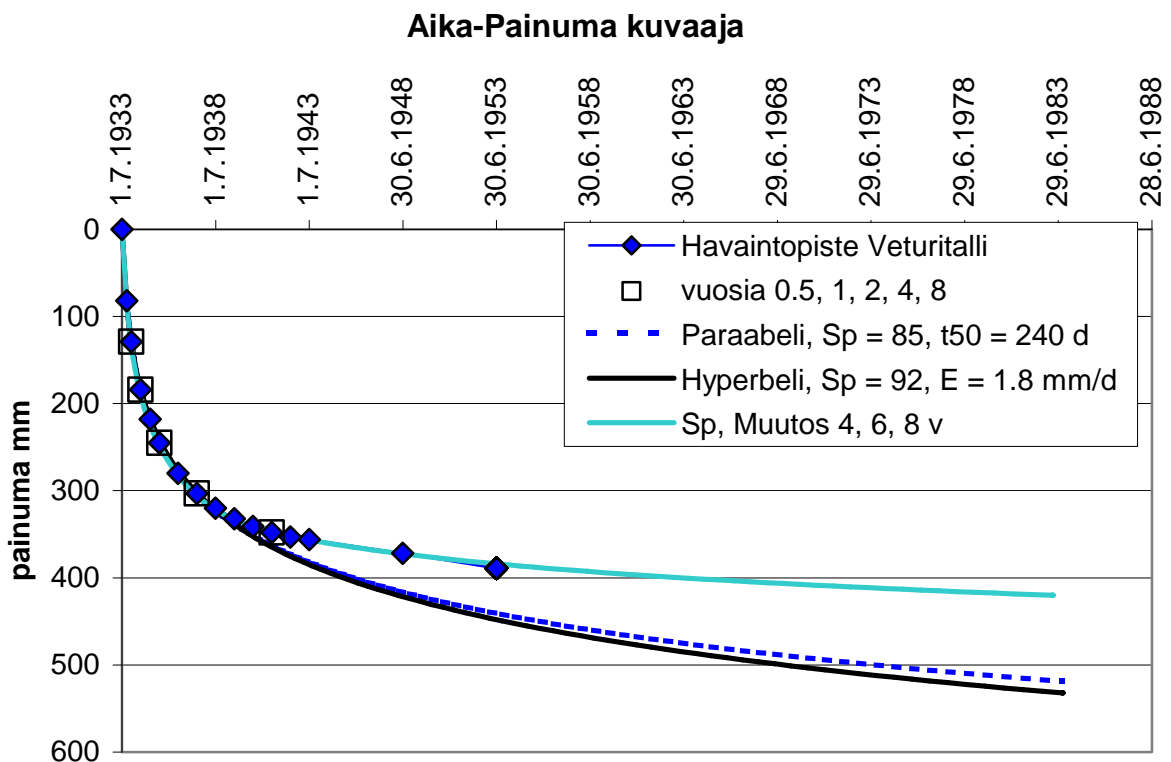
Havaintopiste Veturitalli



○ 1-puol. kl	H	w	m (b = 0)	m	alkupai.	t0 (d)	pain. t (a)	tod. t
● 2-puol. kl	10	60	9...15.2	10	85	91.25	50	50
input				80				
	Sp	t50/E	rs	B	c _v	pain. 50	virh. mm	
Paraabeli	85	240	118	0.085	7.5	420 kev.	ei havaint.	
Hyperbeli	92	1.80	109	0.092		532	ei havaint.	



Aika-Painumapotentiaali kuvaaja



Aika-Painuma kuvaaja

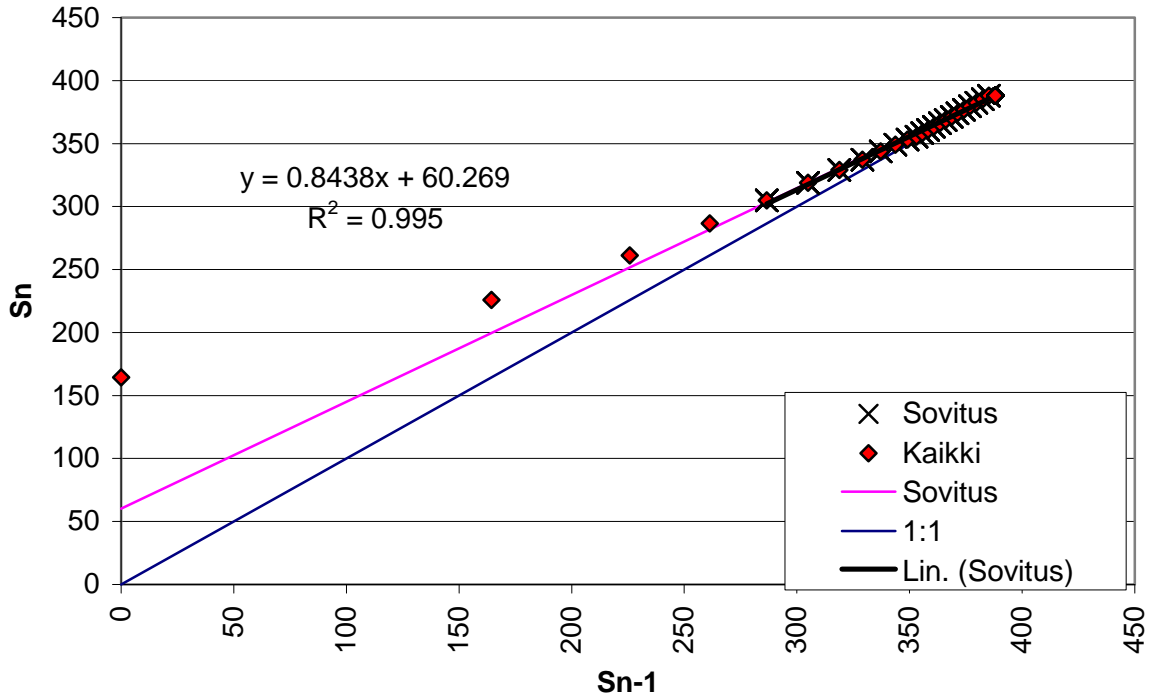
Kerava, 20 v

Havaintopiste Veturitalli

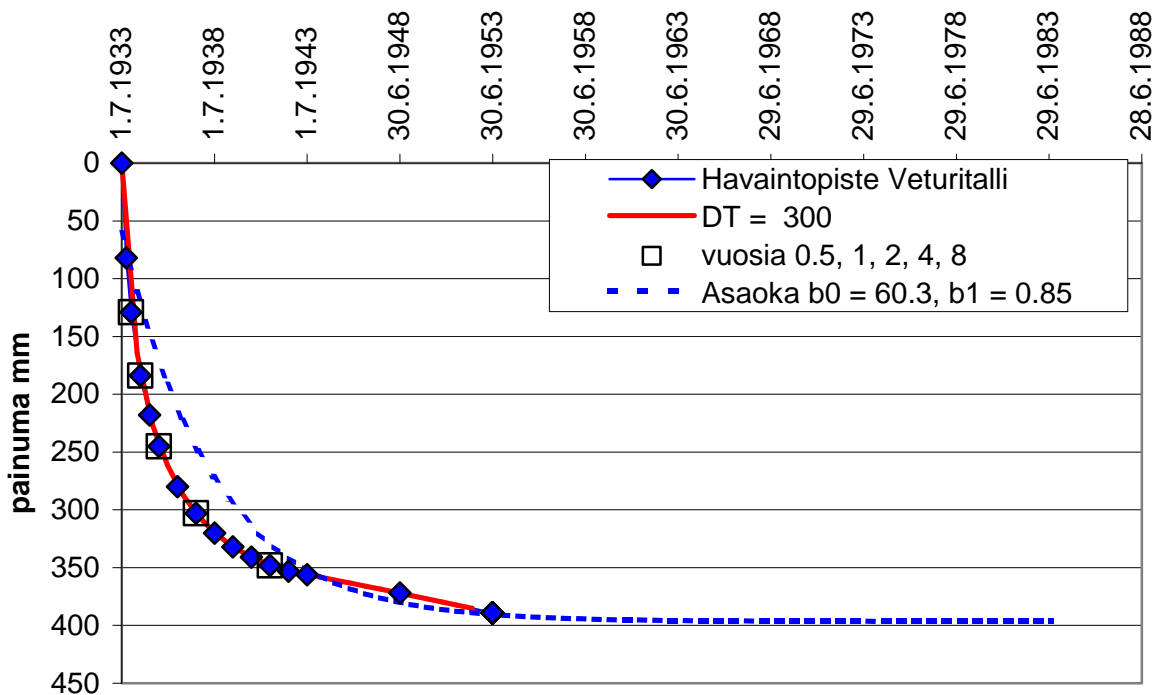


pain. t (a)	tod. t
50	50.14

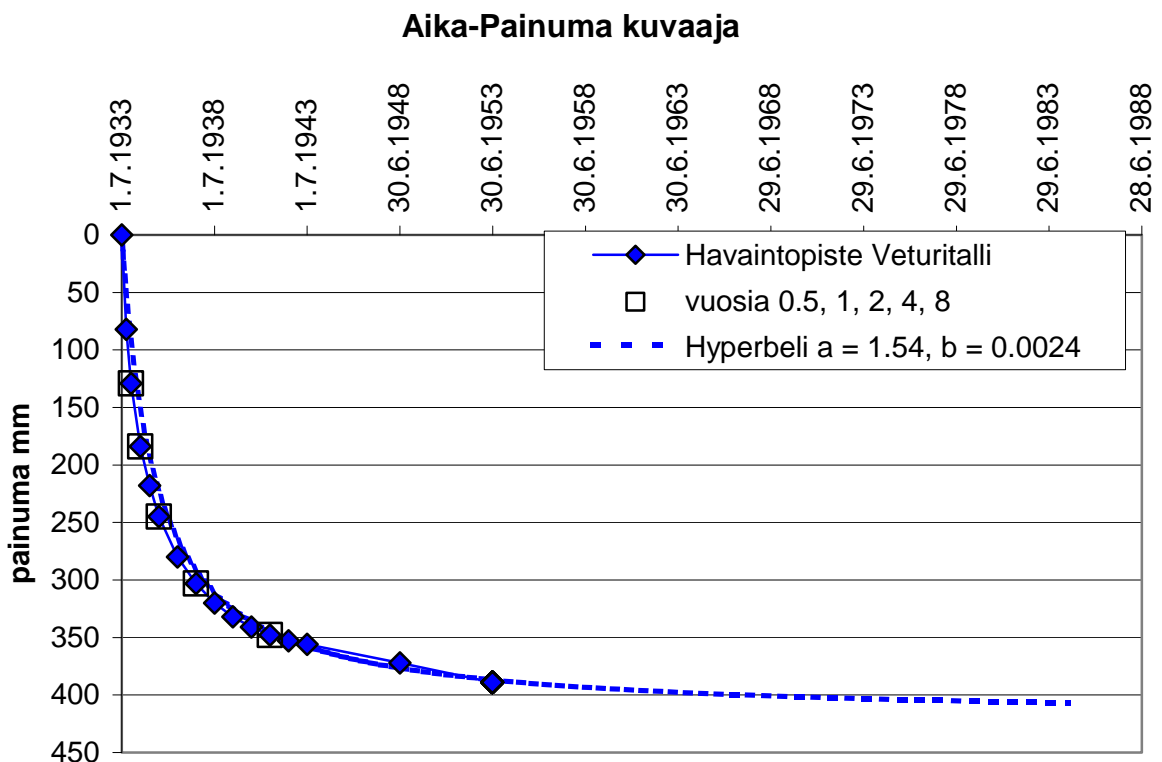
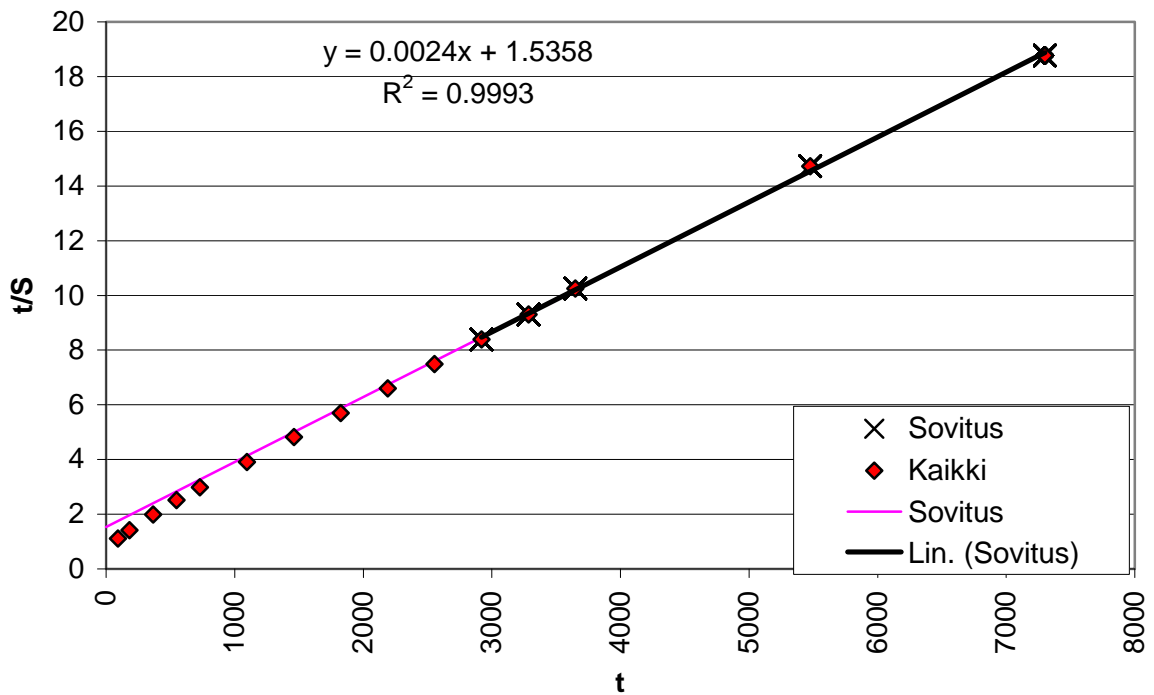
input				output			
	β_0	β_1	t	Prim. Pain.		pain50.14	virh. mm
Asaoka	60.3	0.848	300.00	397		396	ei havaint.
	60.3	0.848	300.00				



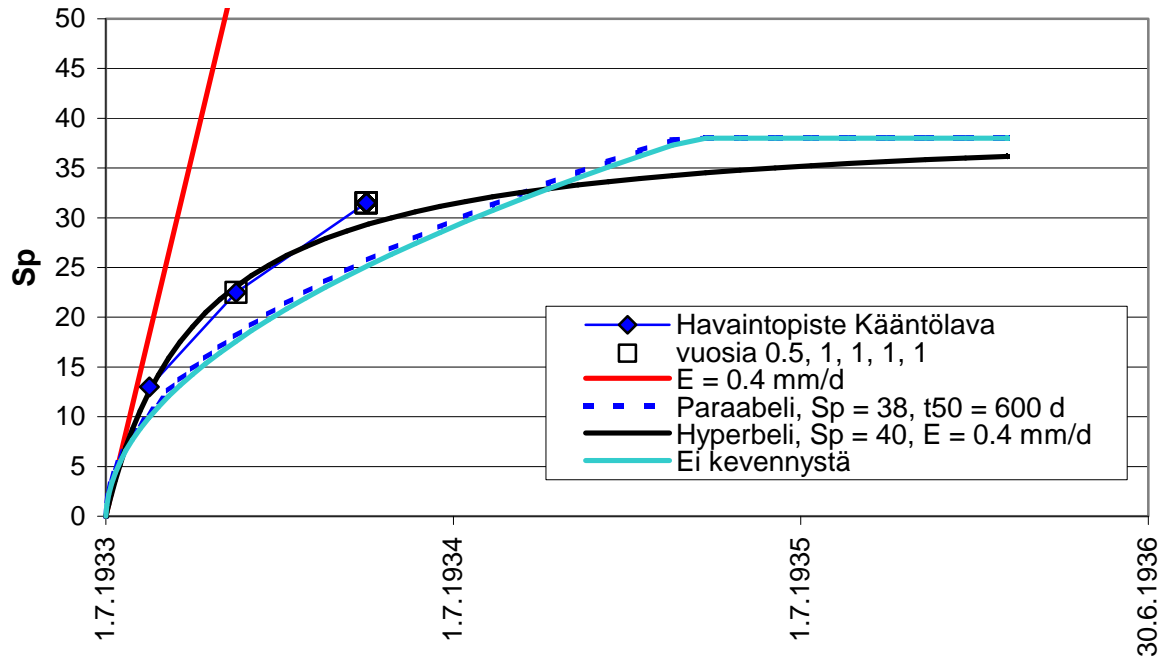
Aika-Painuma kuvaaja



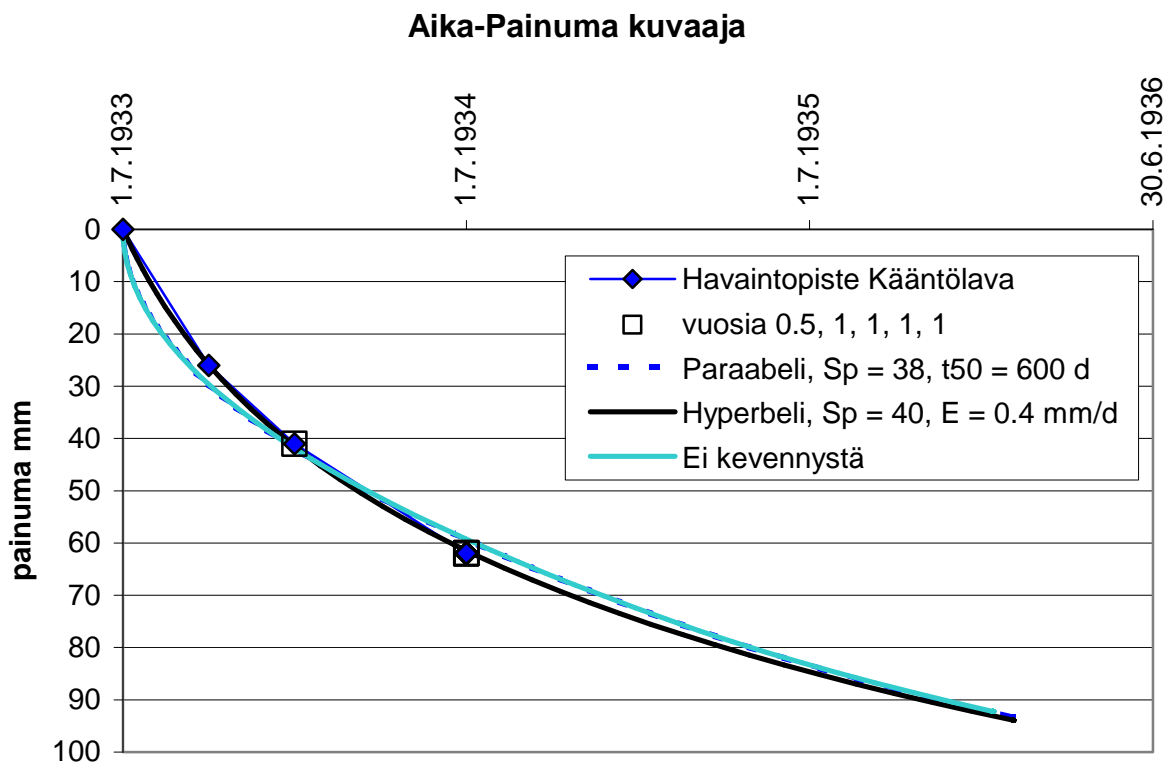
Painumaennuste		Hyperbeli		LIITE VI b / s. 15	
Kerava, 20 v				Havaintopiste Veturitalli	
				pain. t (a)	tod. t
				50	50
input			output		
	a	b	Painuma		
Hyperbeli	1.54	2.38E-03	421	pain50	virh. mm
				407	ei havaint.



Painumaennuste		Painumapotentialiaali				LIITE VI b / s. 1		
Kerava, 1 v						Havaintopiste Kääntölava		▼
● 1-puol. kl.	H	w	m (b = 0)	m	alkupai.	t0 (d)	pain. t (a)	tod. t
○ 2-puol. kl.	10	60	9...15.2	10	0	0	20	20
input					80			
	Sp	t50/E	rs	B	c _v	pain. 20	virh. mm	
Paraabeli	38	600	263	0.038	5.5	171	ei havaint.	
Hyperbeli	40	0.40	250	0.040		172	ei havaint.	

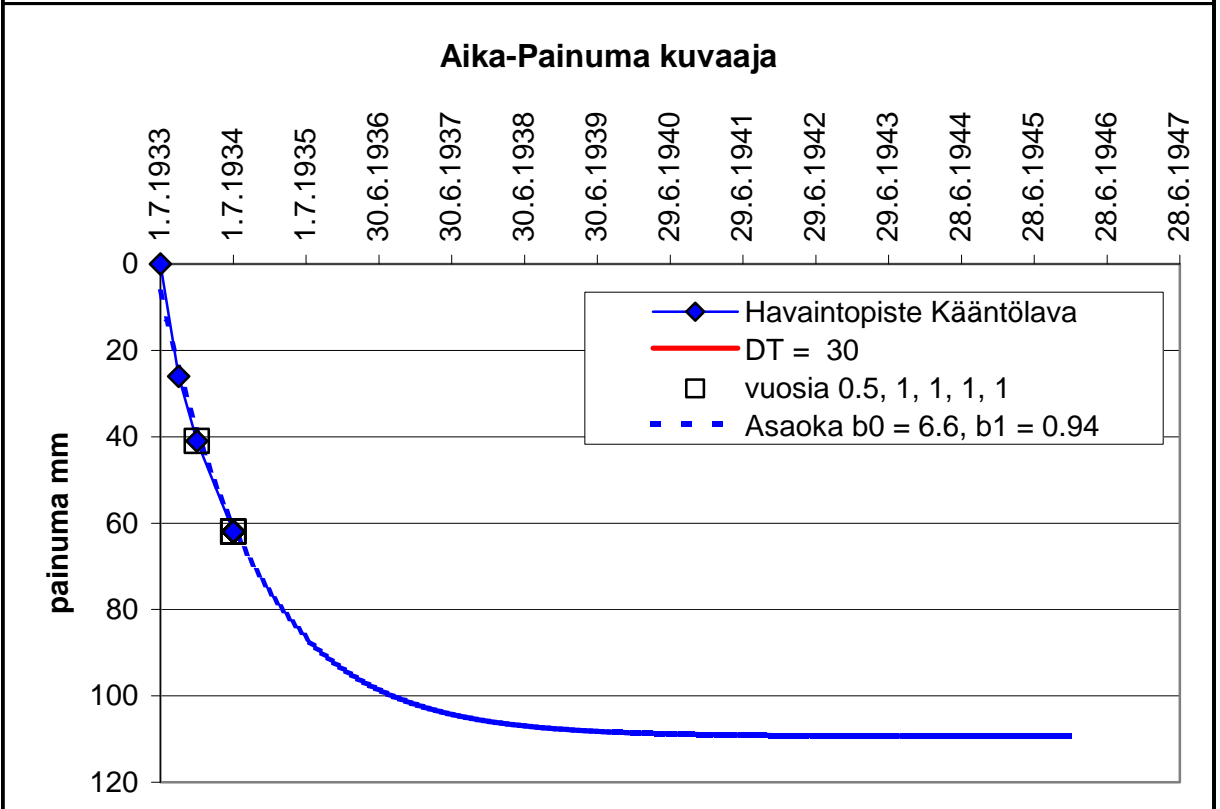
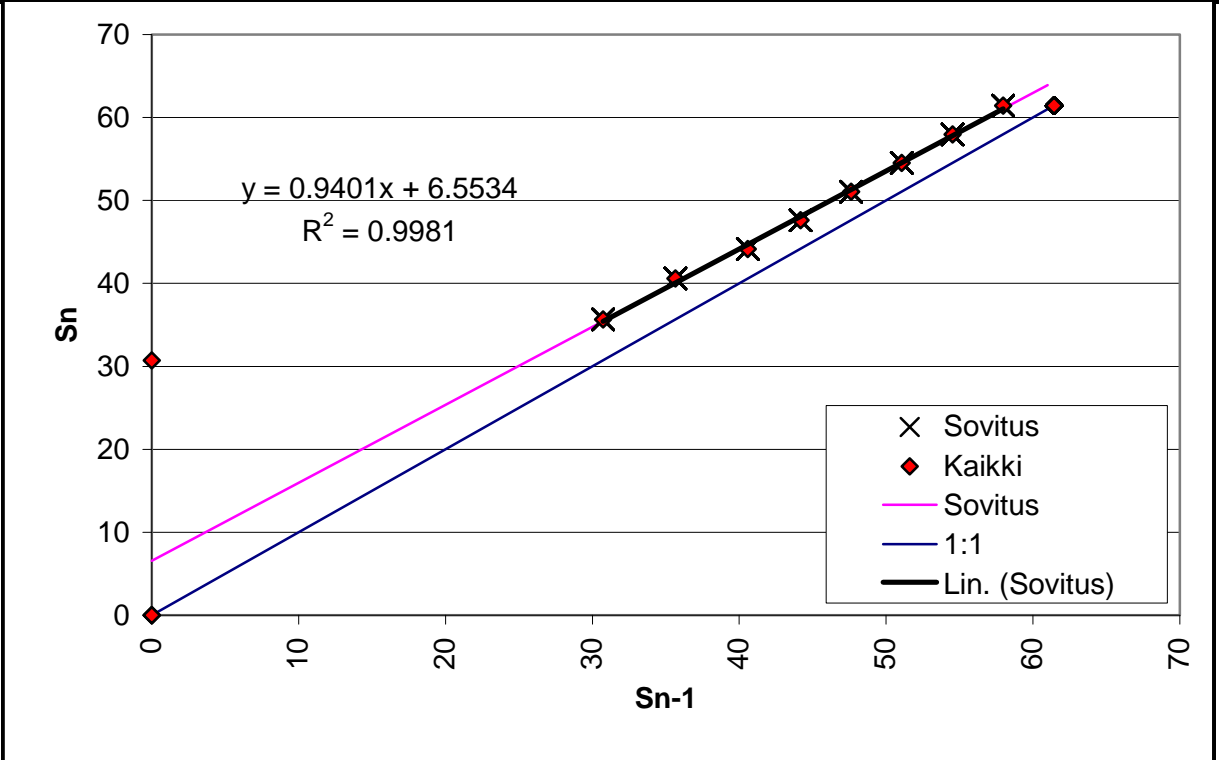


Aika-Painumapotentialiaali kuvaaja

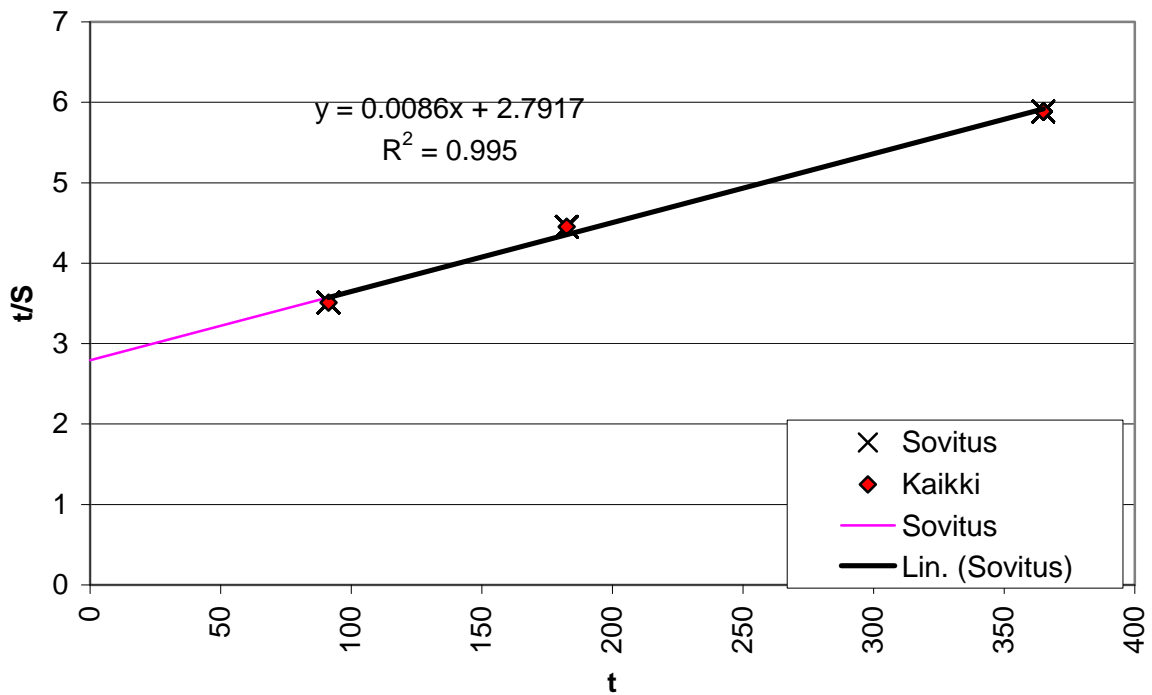


Aika-Painuma kuvaaja

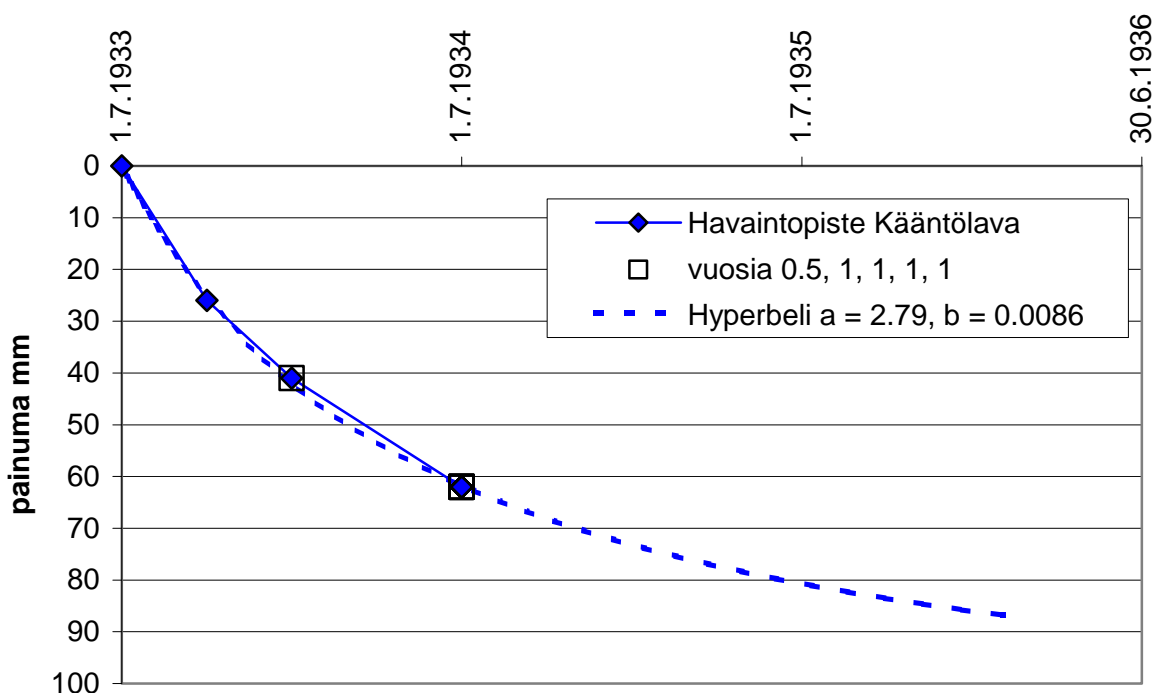
				pain. t (a)	tod. t
				20	19.97
input			output		
	β_0	β_1	t	Prim. Pain.	virh. mm
Asaoka	6.6	0.940	30.00	109	ei havaint.
	6.6	0.940	30.00		



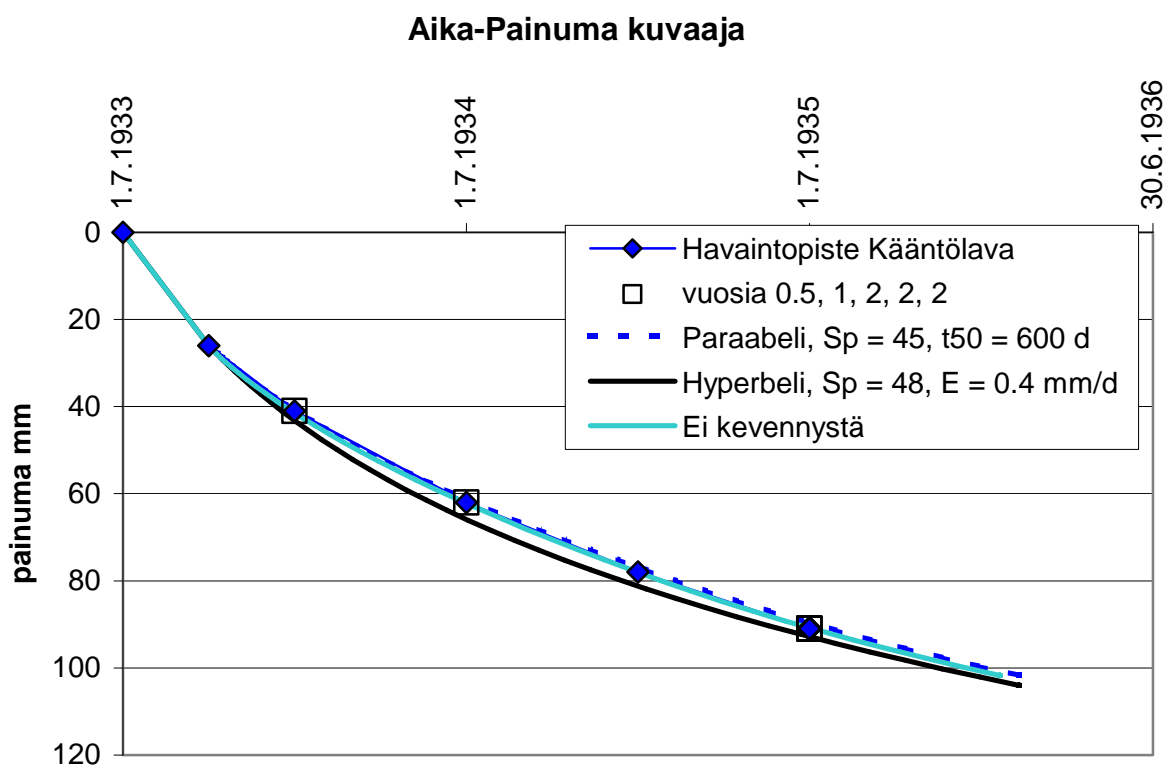
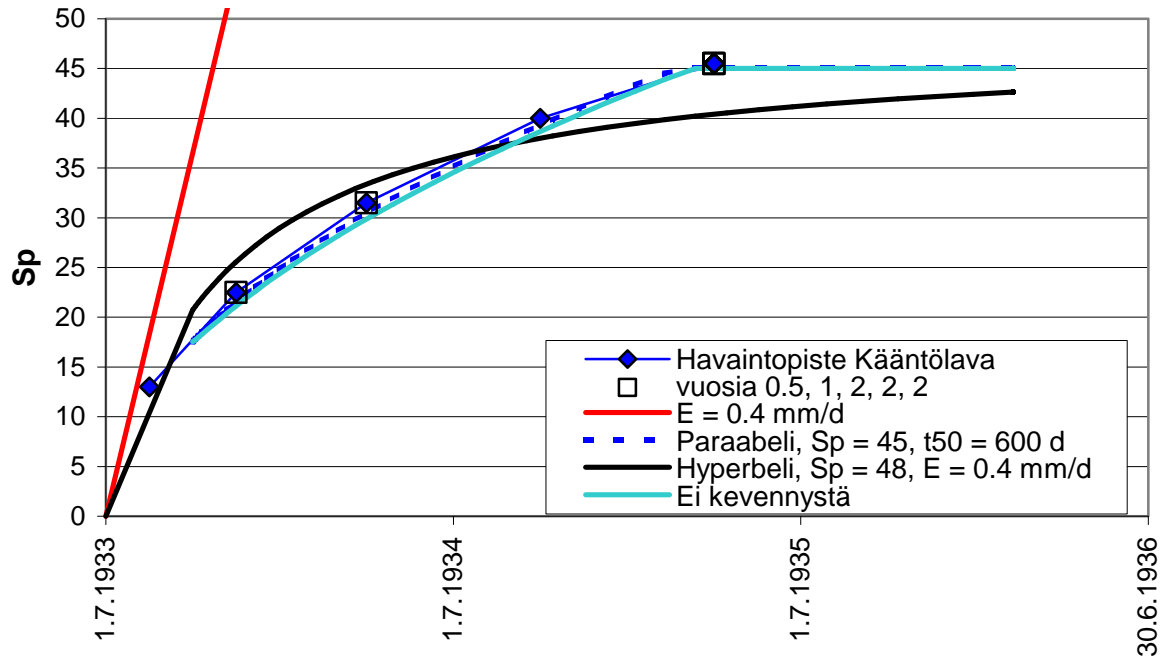
Painumaennuste		Hyperbeli		LIITE VI b / s. 3	
Kerava, 1 v				Havaintopiste Kääntöläva	
				pain. t (a)	tod. t
				20	20
input			output		
	a	b	Painuma		virh. mm
Hyperbeli	2.79	8.57E-03	117	112	ei havaint.



Aika-Painuma kuvaaja

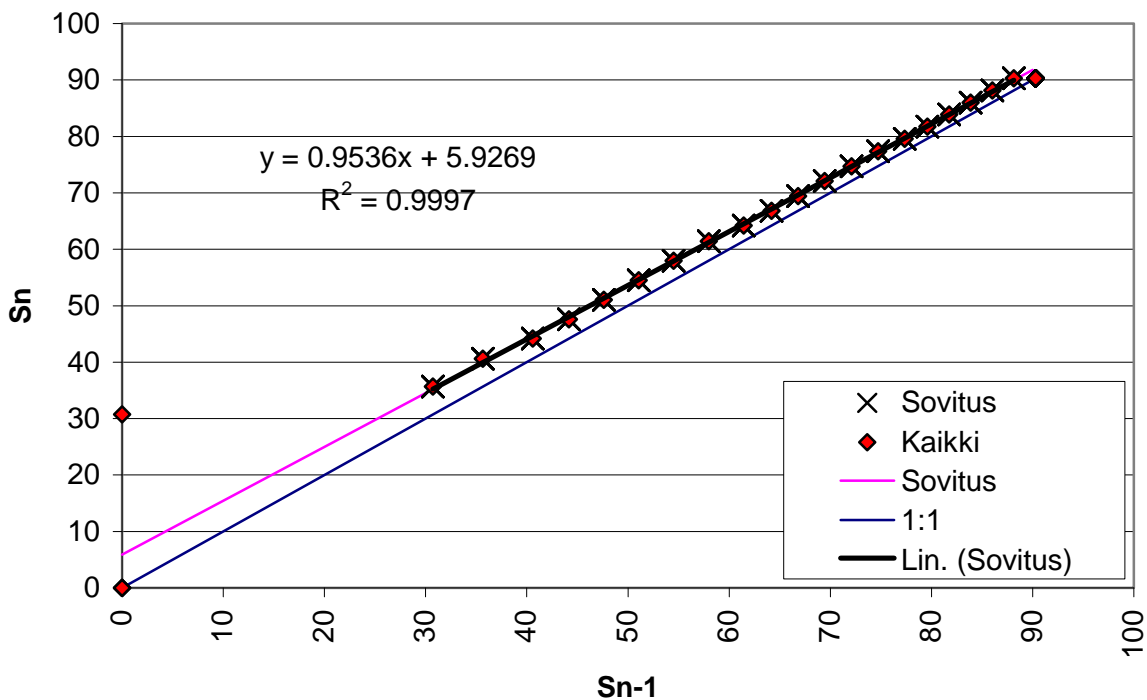


Painumaennuste		Painumapotentiaali				LIITE VI b / s. 4		
Kerava, 2 v						Havaintopiste Kääntöläva		▼
○ 1-puol. kl.	H	w	m (b = 0)	m	alkupai.	t0 (d)	pain. t (a)	tod. t
● 2-puol. kl.	10	60	9...15.2	10	26	91.25	20	20
input				80				
	Sp	t50/E	rs	B	c _v	pain. 20	virh. mm	
Paraabeli	45	600	222	0.045	3.0	193	ei havaint.	
Hyperbeli	48	0.40	208	0.048		197	ei havaint.	

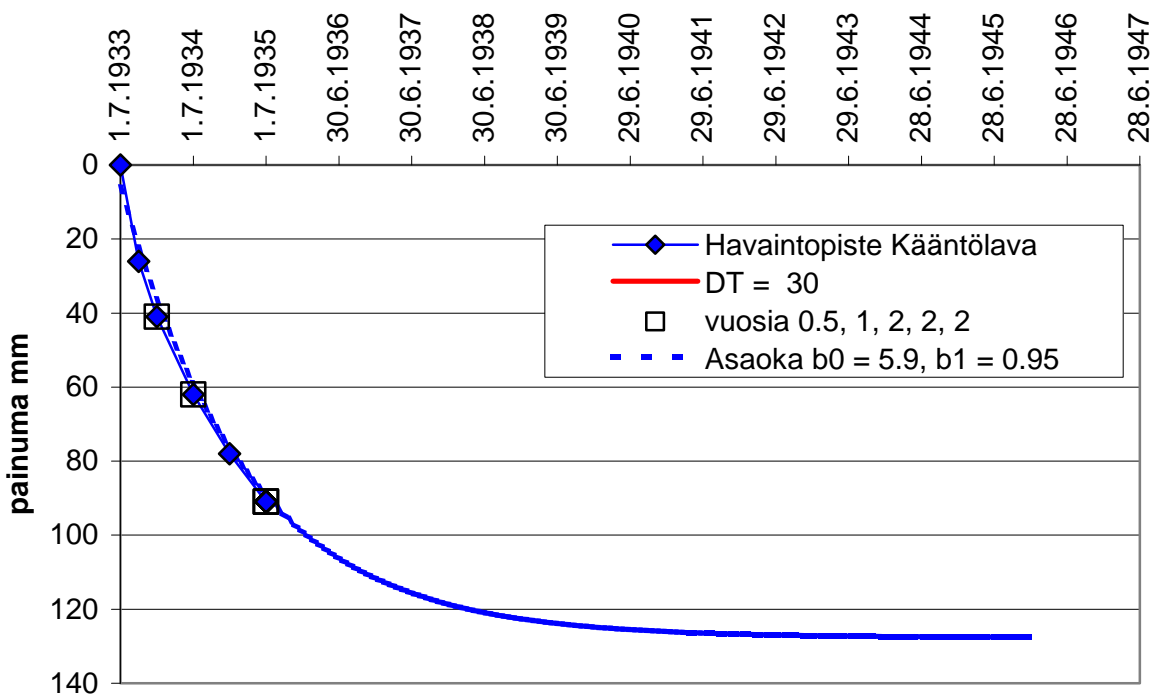




				pain. t (a)	tod. t	
				20	19.97	
input			output			
	β_0	β_1	t	Prim. Pain.	pain19.97	virh. mm
Asaoka	5.9	0.954	30.00	128	127	ei havaint.
	5.9	0.954	30.00			



Aika-Painuma kuvaaja

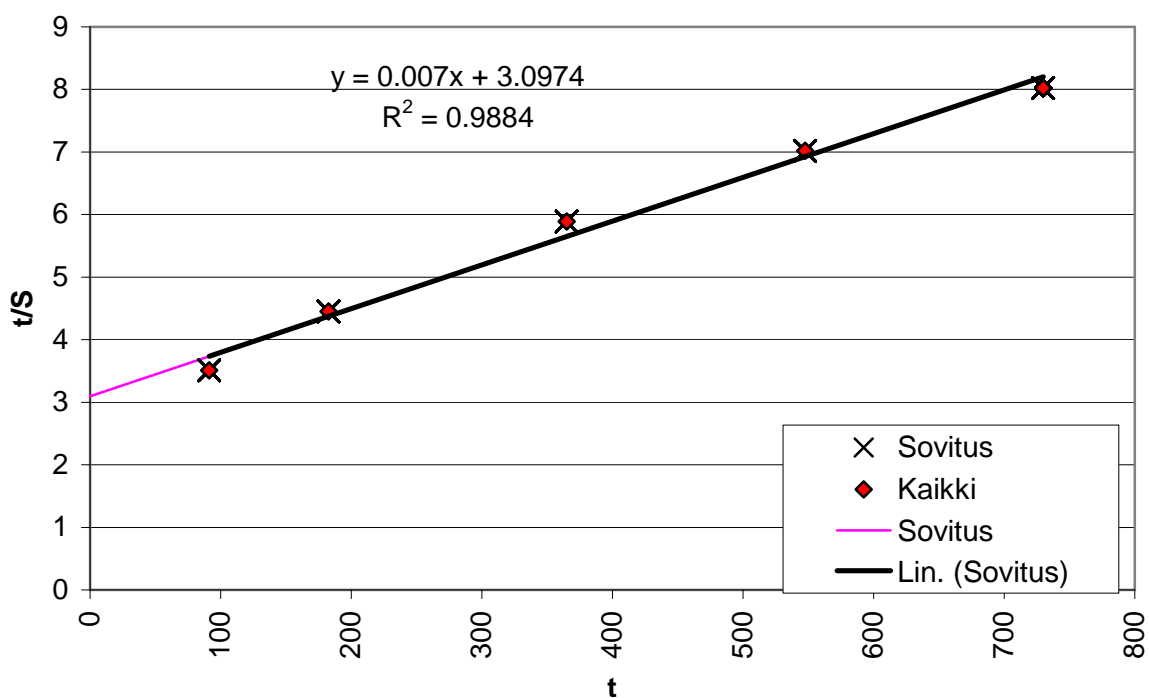


Kerava, 2 v

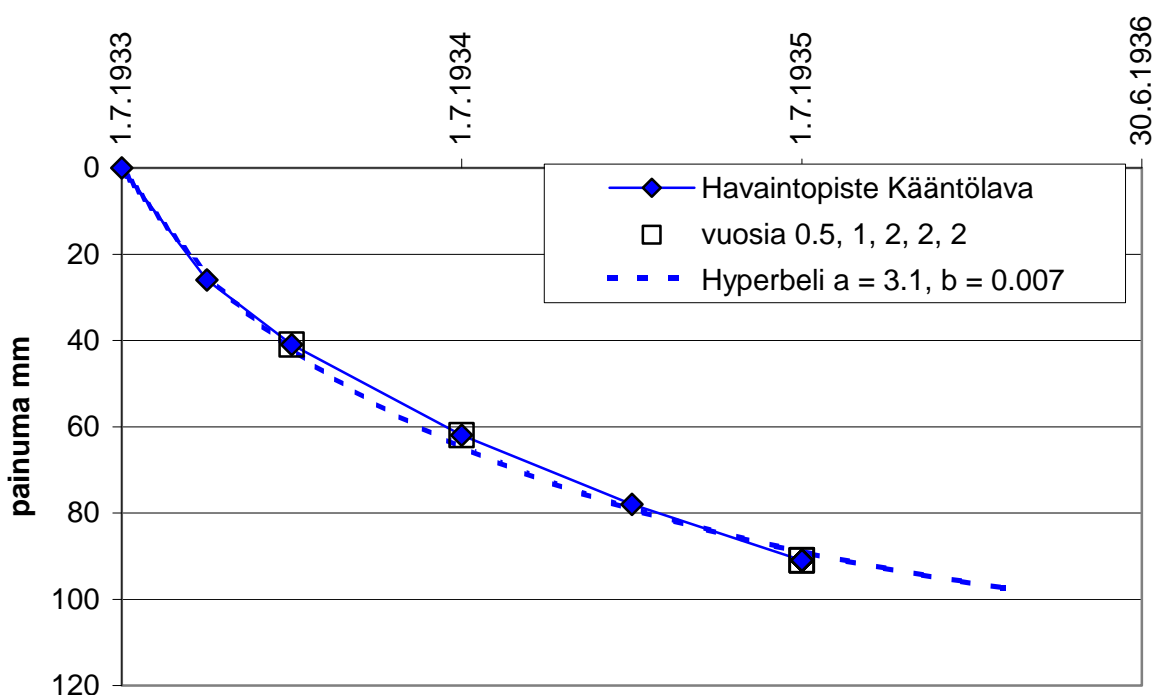
Havaintopiste Käntölava



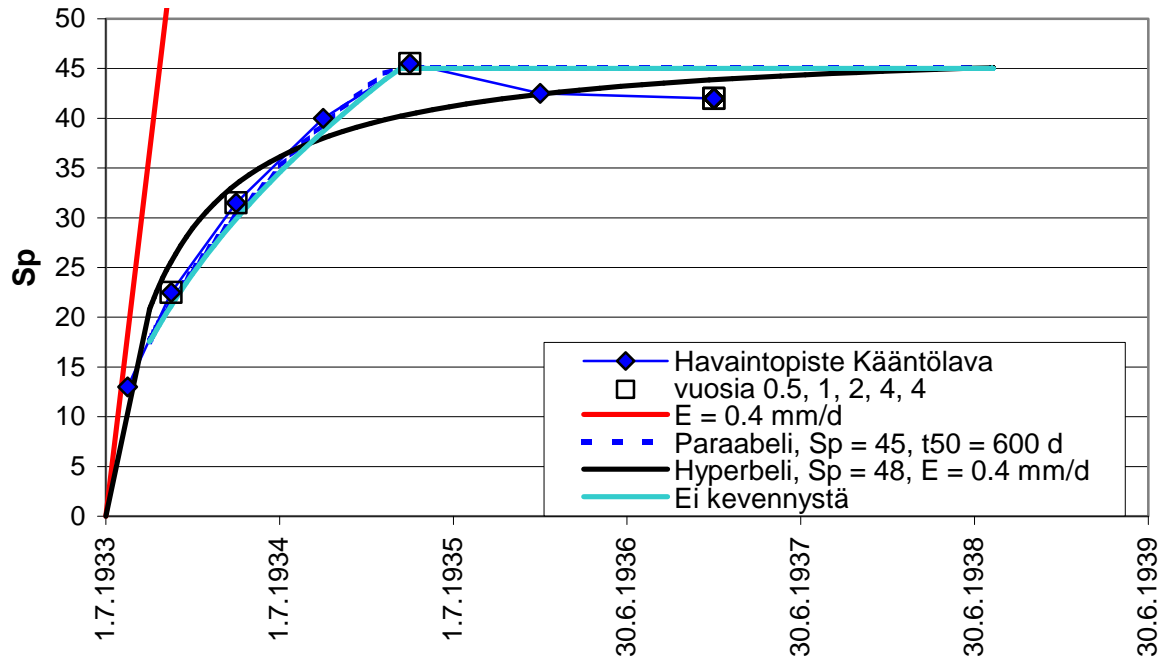
				pain. t (a)	tod. t
				20	20
input			output		
	a	b	Painuma	pain20	virh. mm
Hyperbeli	3.10	7.00E-03	143	135	ei havaint.



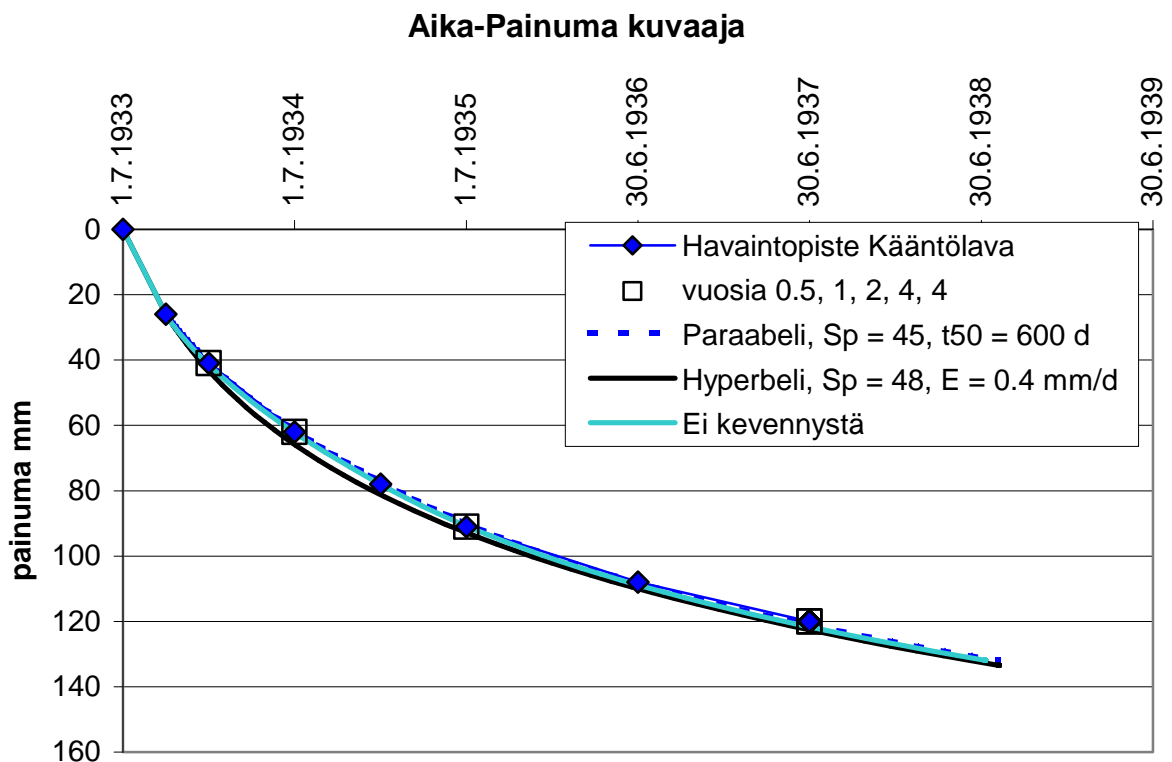
Aika-Painuma kuvaaja



Painumaennuste		Painumapotentiaali				LIITE VI b / s. 7		
Kerava, 4 v						Havaintopiste Kääntölava		▼
○ 1-puol. kl.	H	w	m (b = 0)	m	alkupai.	t0 (d)	pain. t (a)	tod. t
● 2-puol. kl.	10	60	9...15.2	10	26	91.25	20	20
input				80				
	Sp	t50/E	rs	B	c _v	pain. 20	virh. mm	
Paraabeli	45	600	222	0.045	3.0	193	ei havaint.	
Hyperbeli	48	0.40	208	0.048		197	ei havaint.	

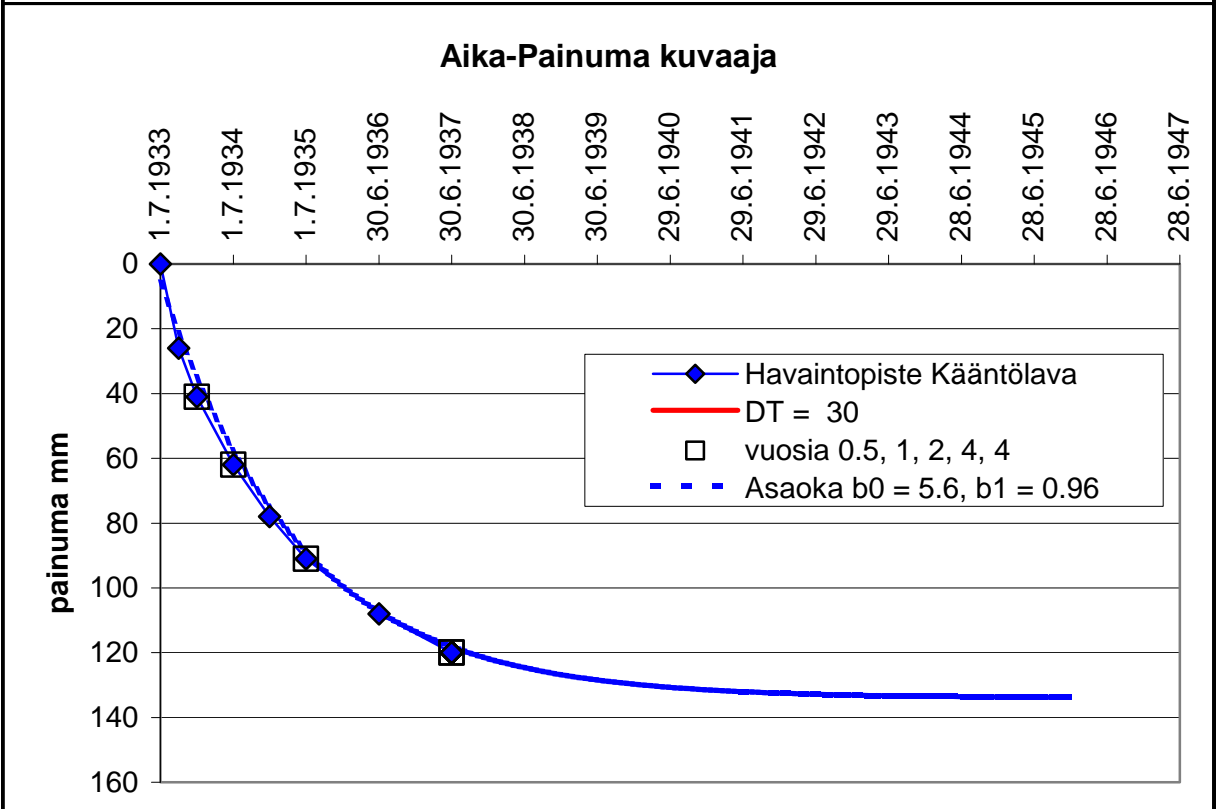
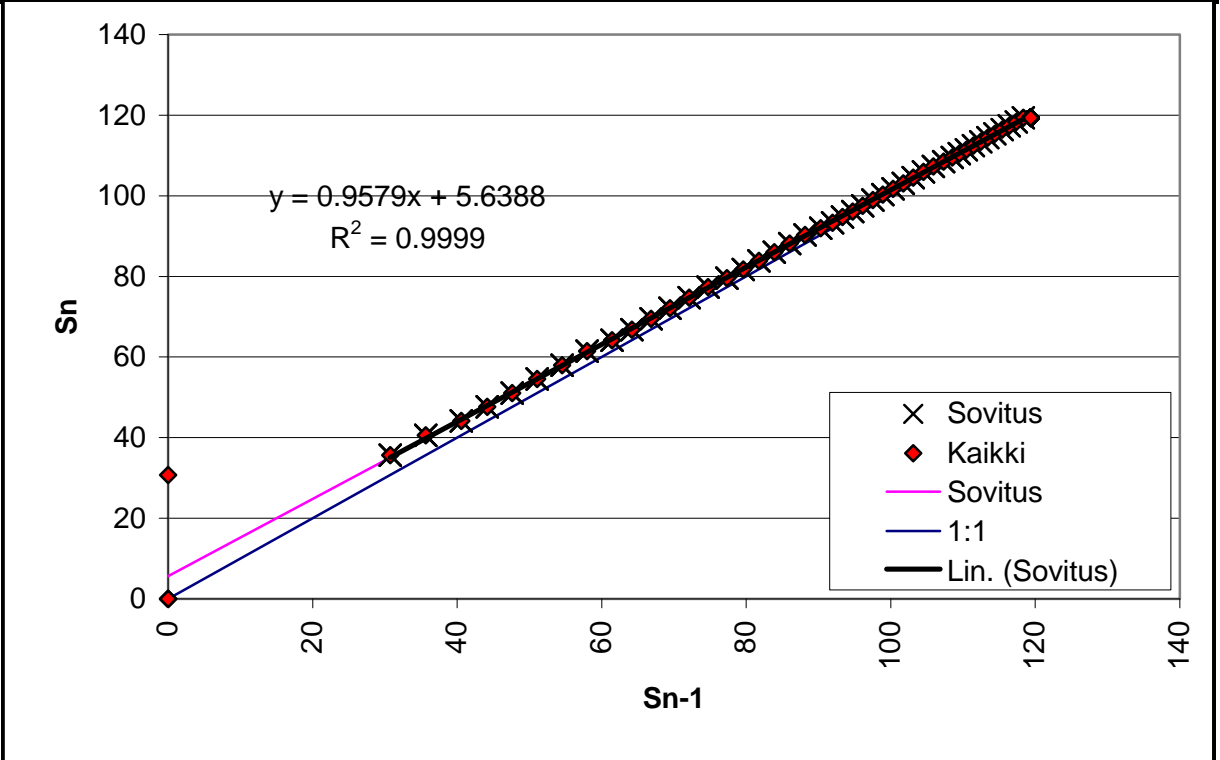


Aika-Painumapotentiaali kuvaaja



Aika-Painuma kuvaaja

				pain. t (a)	tod. t
				20	19.97
input			output		
	β_0	β_1	t	Prim. Pain.	virh. mm
Asaoka	5.6	0.958	30.00	134	ei havaint.
	5.6	0.958	30.00		

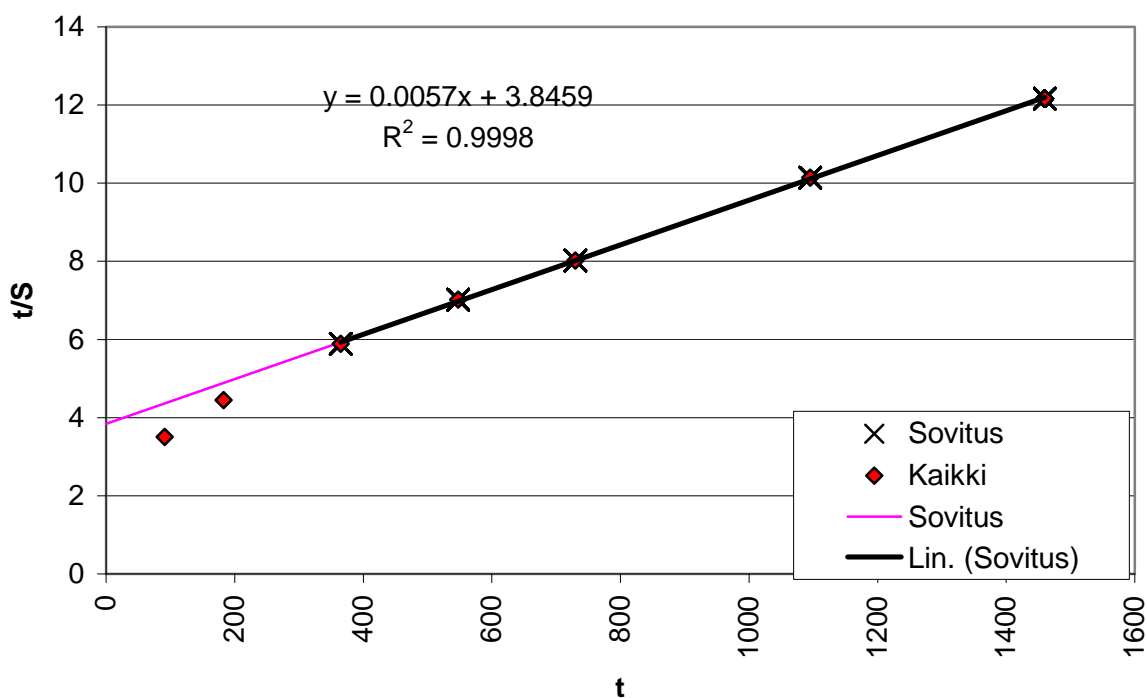


Kerava, 4 v

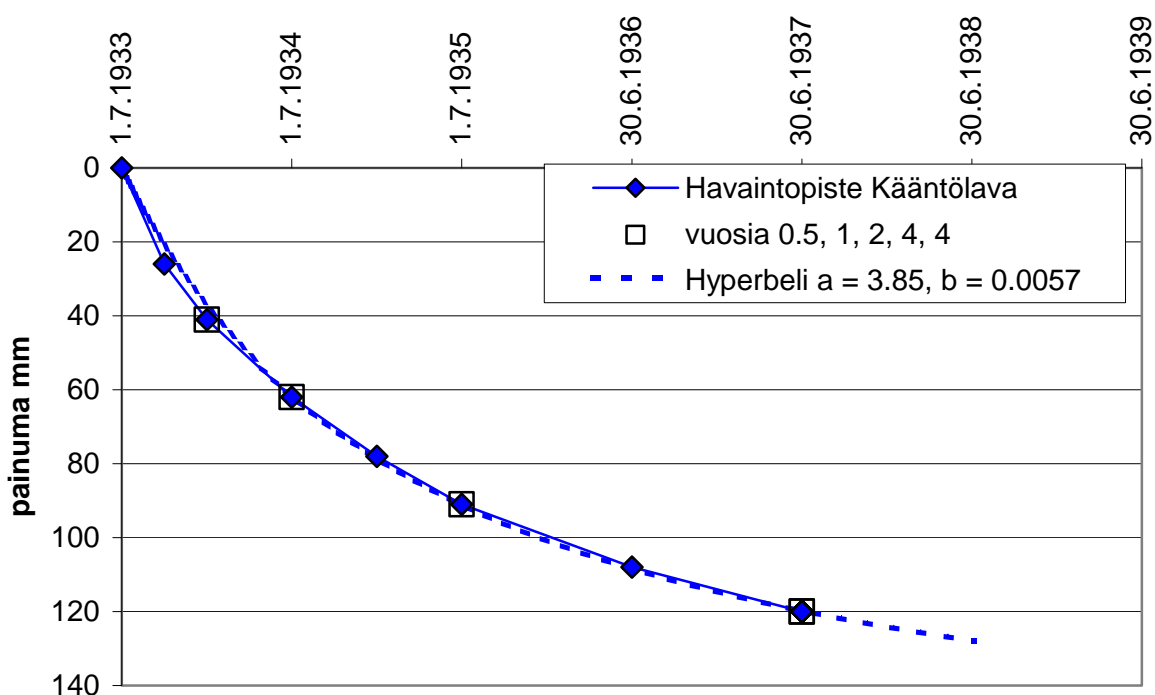
Havaintopiste Käntölava



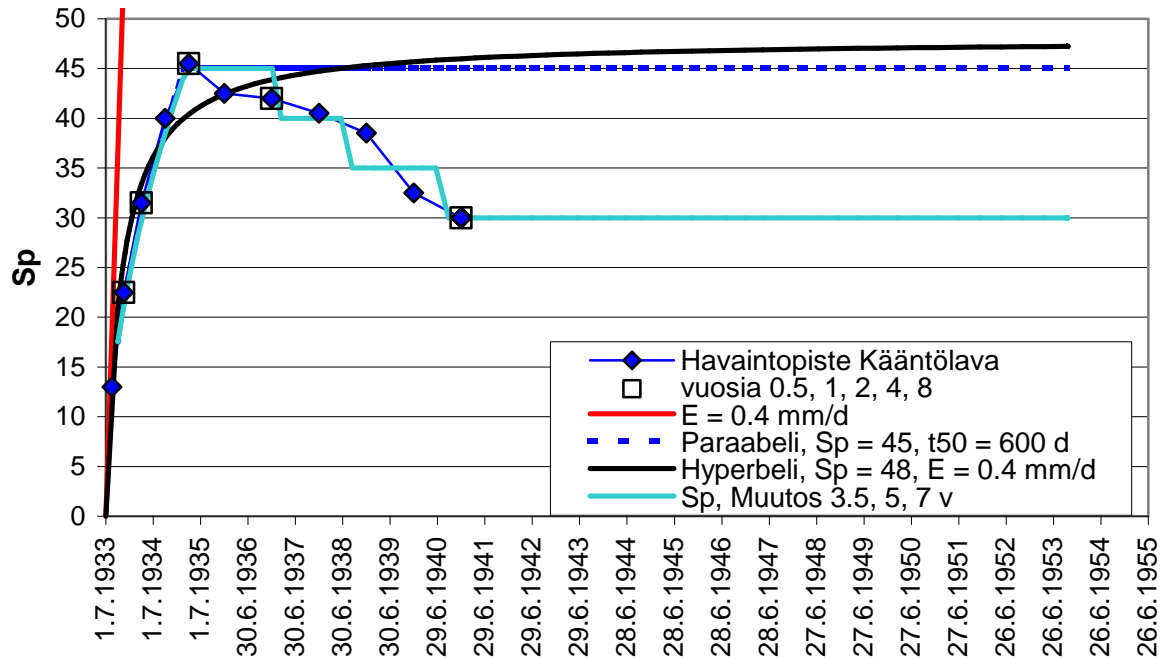
				pain. t (a)	tod. t
				20	20
input			output		
	a	b	Painuma	pain20	virh. mm
Hyperbeli	3.85	5.72E-03	175	160	ei havaint.



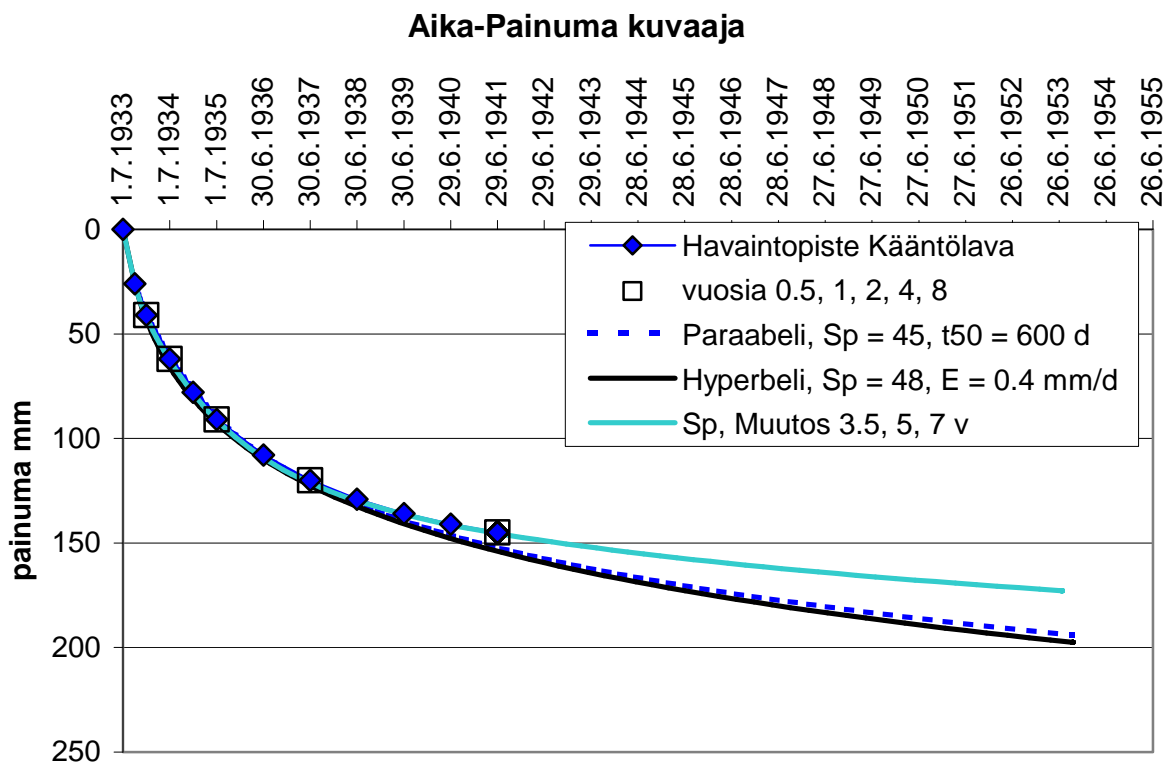
Aika-Painuma kuvaaja



Painumaennuste		Painumapotentiaali				LIITE VI b / s. 10		
Kerava, 8 v						Havaintopiste Kääntölava		▼
○ 1-puol. kl.	H	w	m (b = 0)	m	alkupai.	t0 (d)	pain. t (a)	tod. t
● 2-puol. kl.	10	60	9...15.2	10	26	91.25	20	20
input				80				
	Sp	t50/E	rs	B	c _v	pain. 20	virh. mm	
Paraabeli	45	600	222	0.045	3.0	172 kev.	ei havaint.	
Hyperbeli	48	0.40	208	0.048		197	ei havaint.	



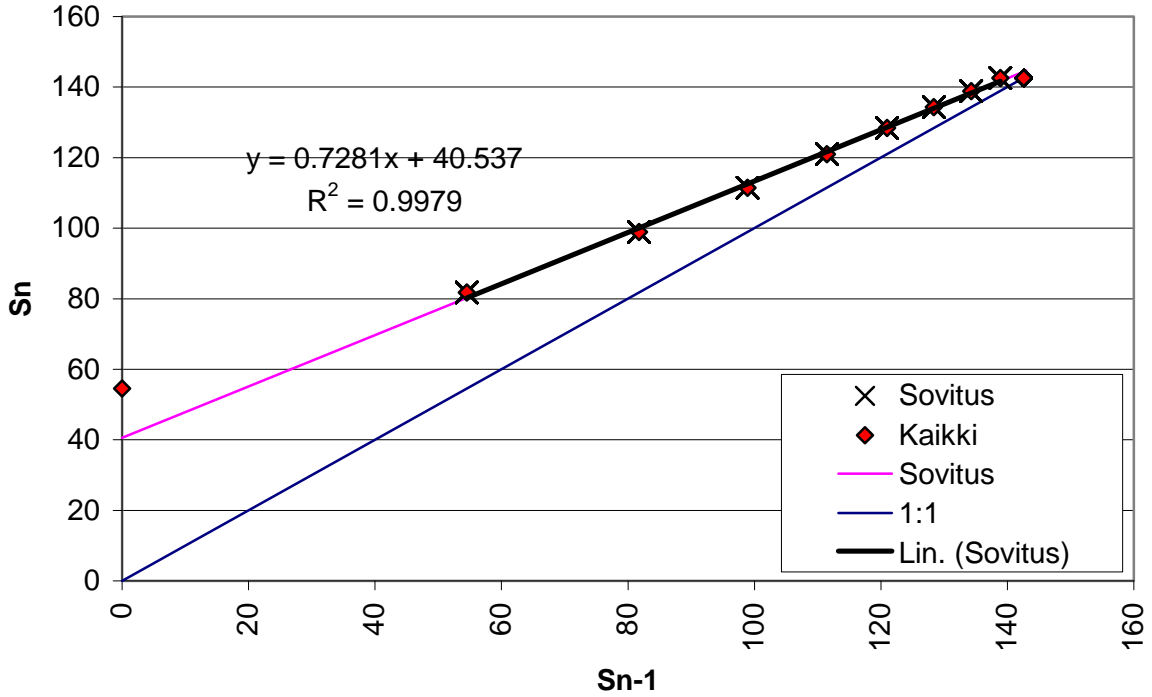
Aika-Painumapotentiaali kuvaaja



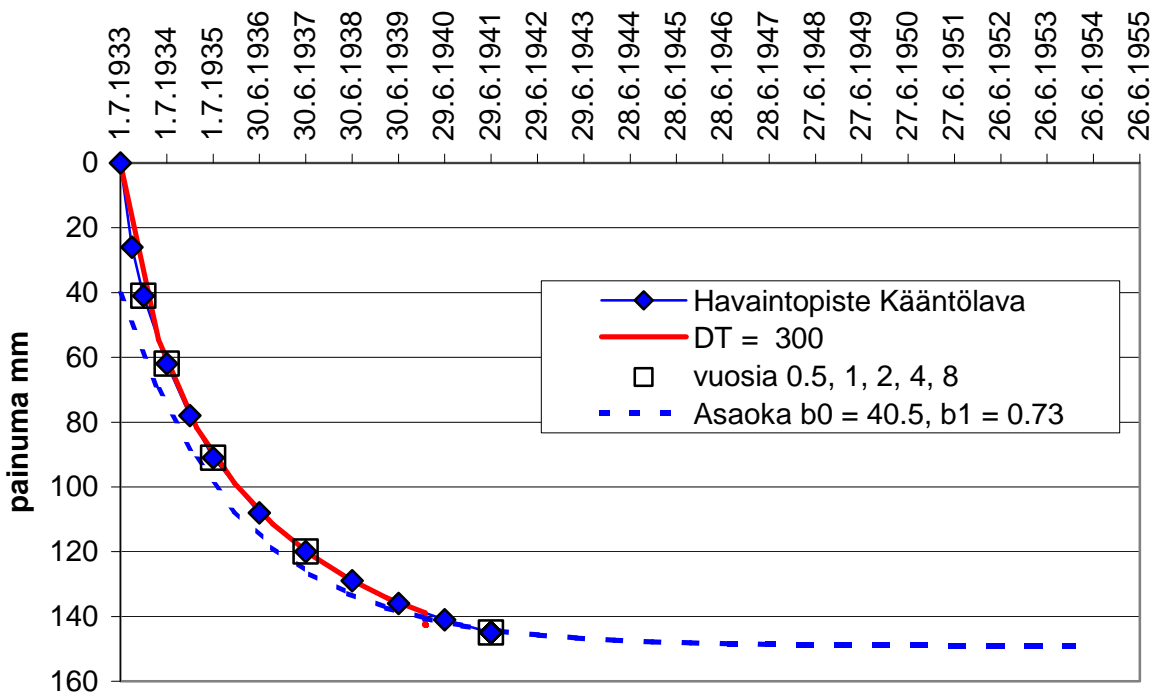
Aika-Painuma kuvaaja



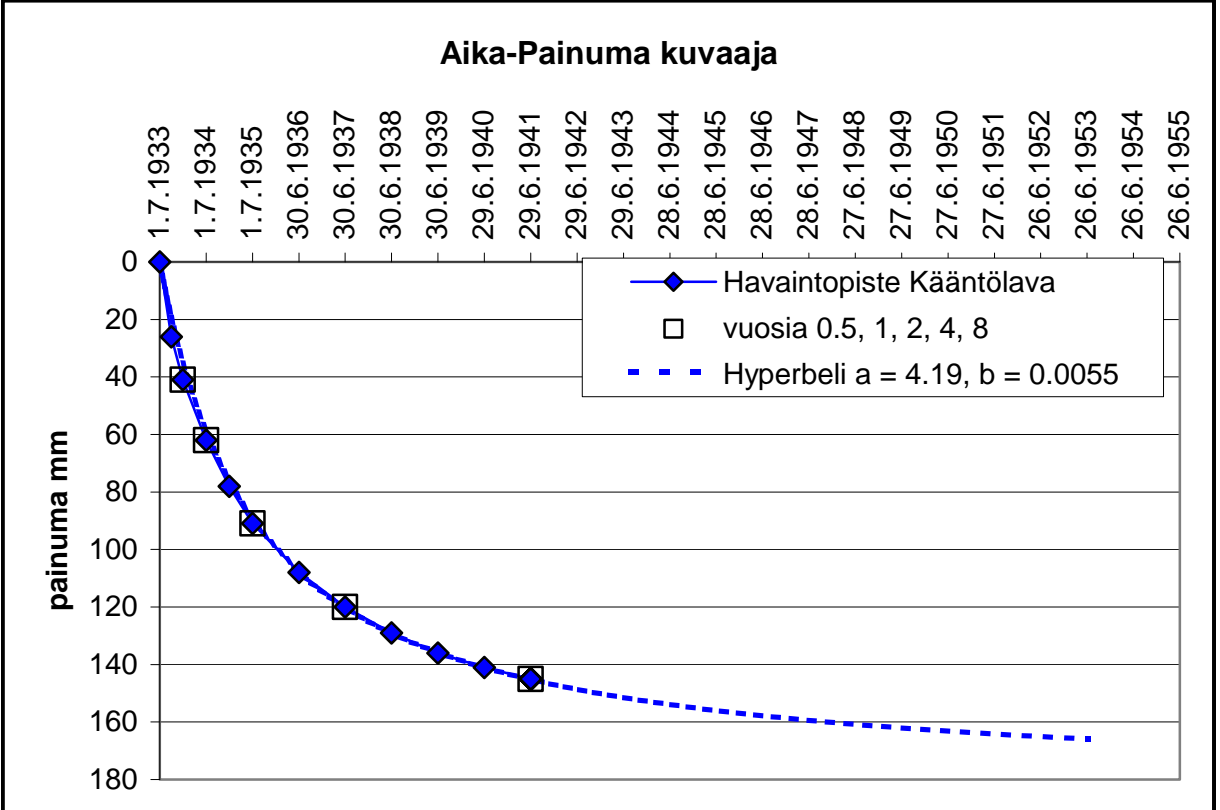
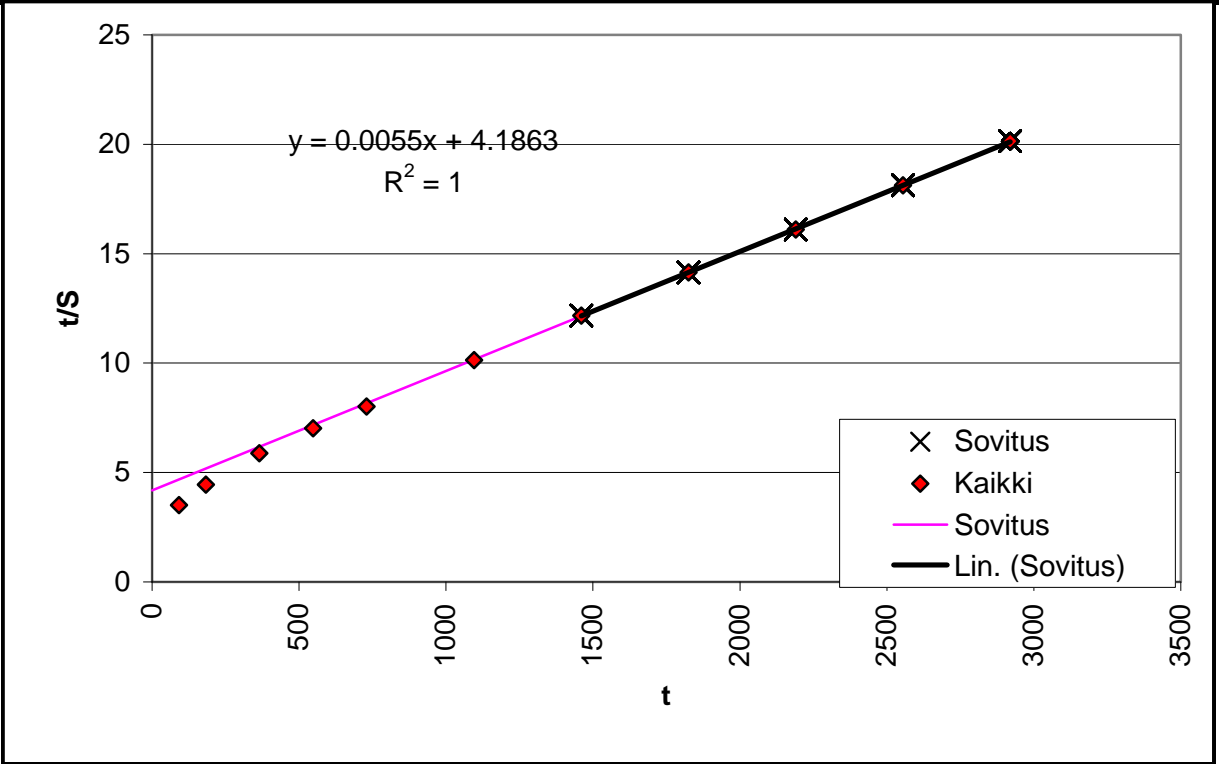
				pain. t (a)	tod. t	
				20	19.73	
input			output			
	β_0	β_1	t	Prim. Pain.	pain19.73	virh. mm
Asaoka	40.5	0.728	300.00	149	149	ei havaint.
	40.5	0.728	300.00			



Aika-Painuma kuvaaja



				pain. t (a)	tod. t
				20	20
input			output		
	a	b	Painuma		virh. mm
Hyperbeli	4.19	5.46E-03	183		ei havaint.



Painumaennuste

Painumapotentiaali

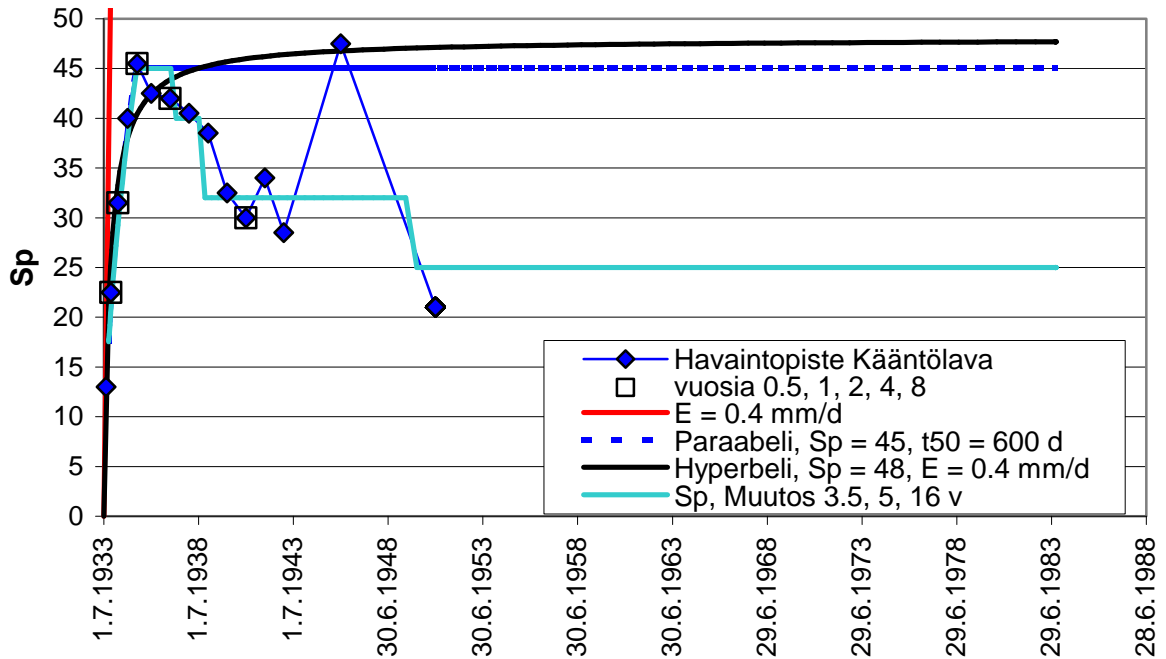
LIITE VI b / s. 13

Kerava, 20 v

Havaintopiste Kääntölava

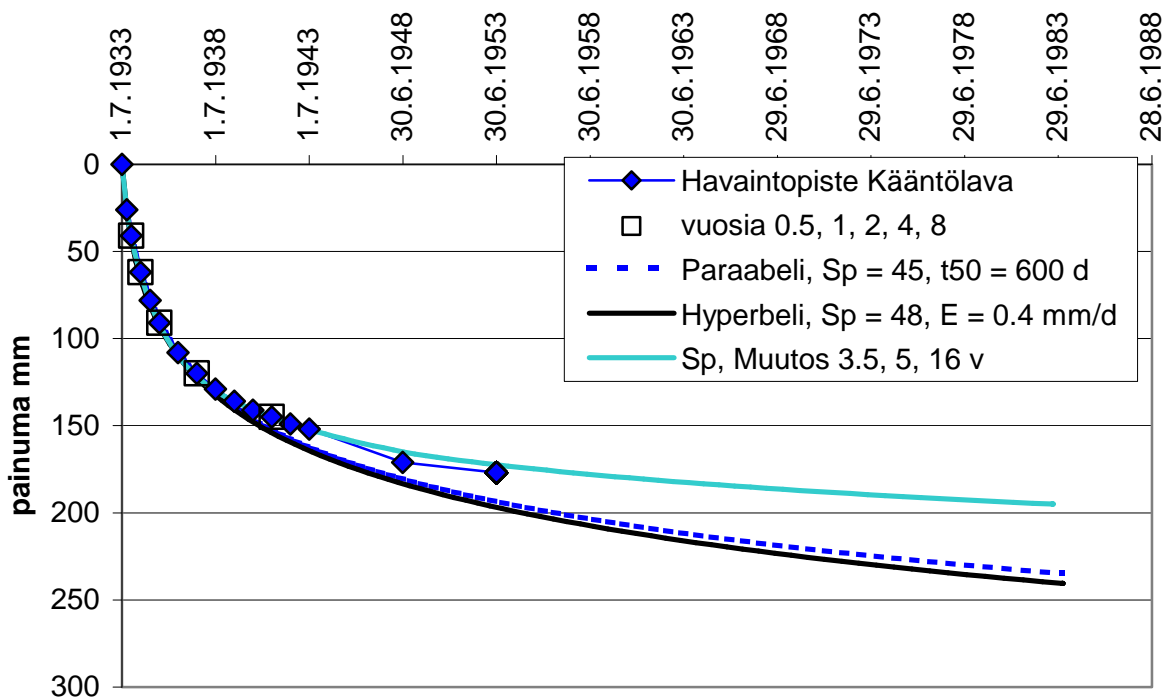


○ 1-puol. kl	H	w	m (b = 0)	m	alkupai.	t0 (d)	pain. t (a)	tod. t
● 2-puol. kl	10	60	9...15.2	10	26	91.25	50	50
input				80				
	Sp	t50/E	rs	B	c _v	pain. 50	virh. mm	
Paraabeli	45	600	222	0.045	3.0	195 kev.	ei havaint.	
Hyperbeli	48	0.40	208	0.048		240	ei havaint.	



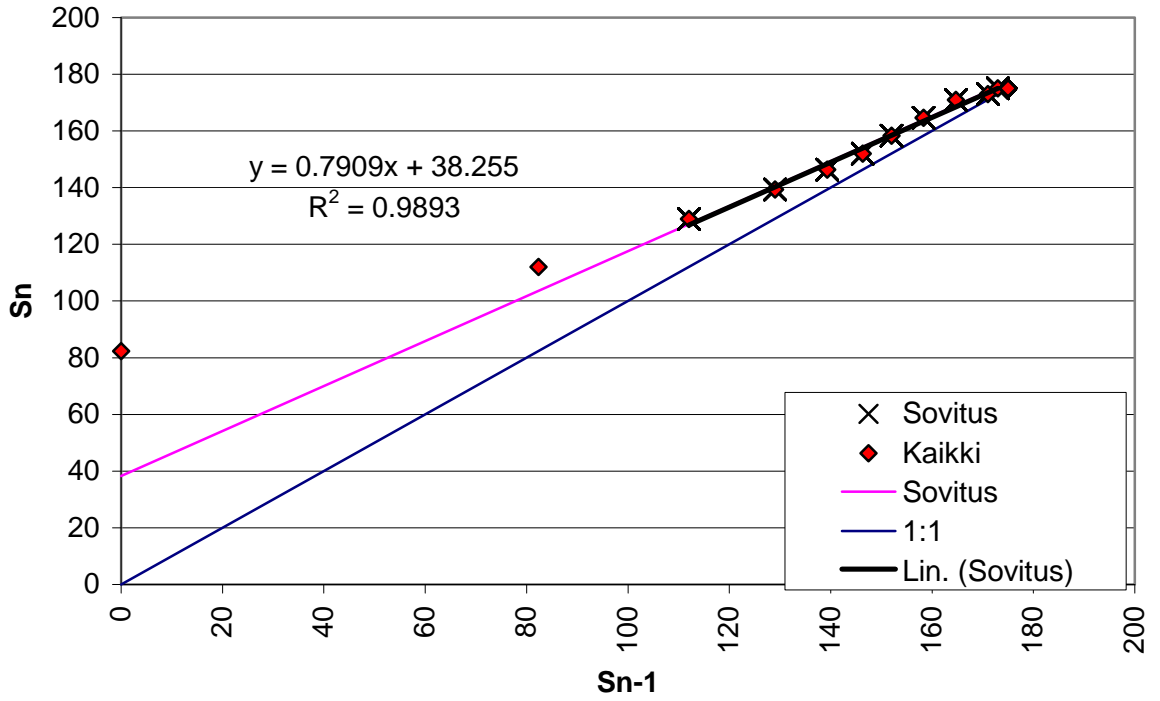
Aika-Painumapotentiaali kuvaaja

Aika-Painuma kuvaaja

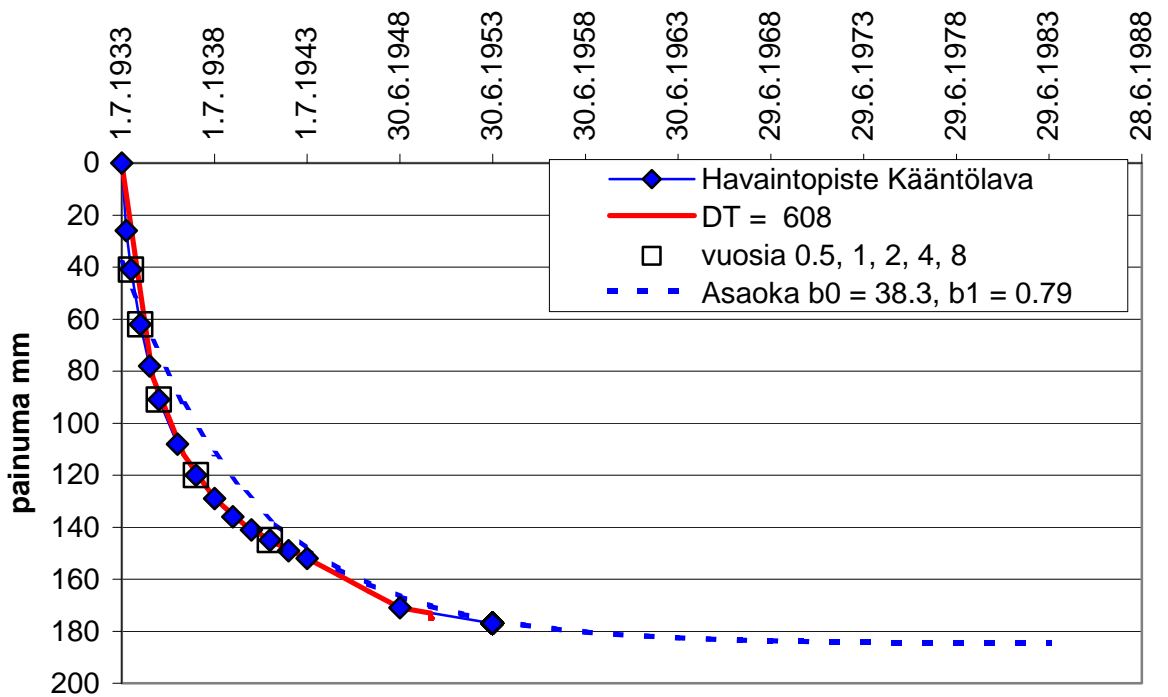




				pain. t (a)	tod. t
				50	50
input			output		
	β_0	β_1	t	Prim. Pain.	virh. mm
Asaoka	38.3	0.793	608.34	185	ei havaint.
	38.3	0.793	608.34		



Aika-Painuma kuvaaja

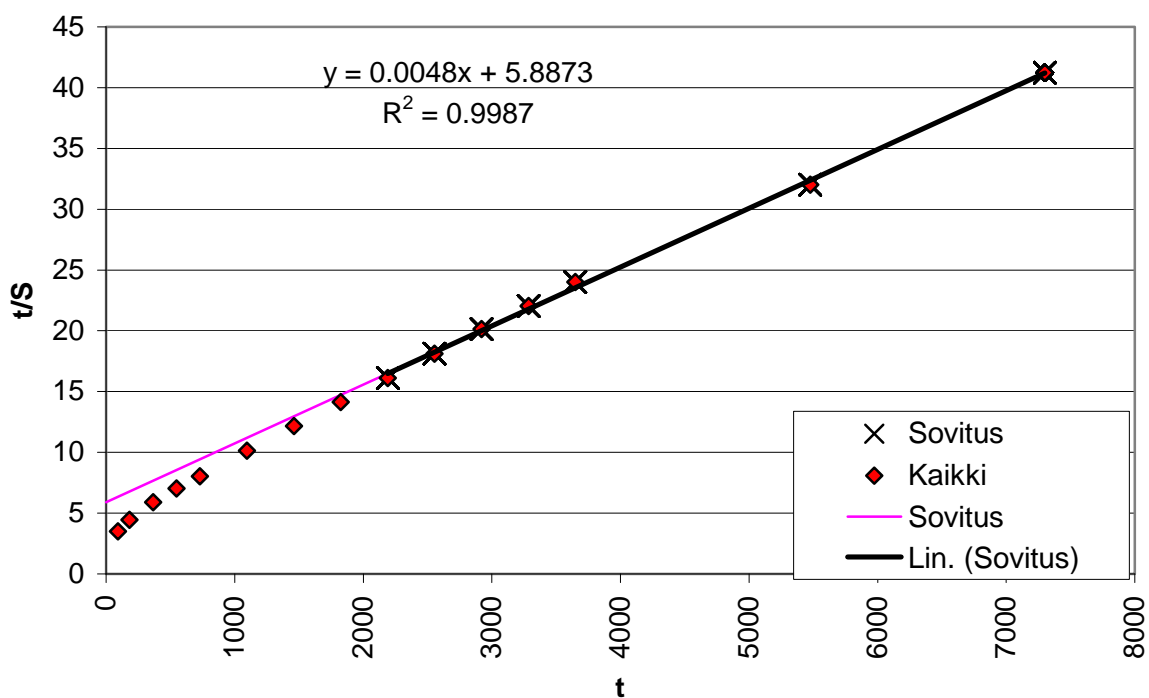


Kerava, 20 v

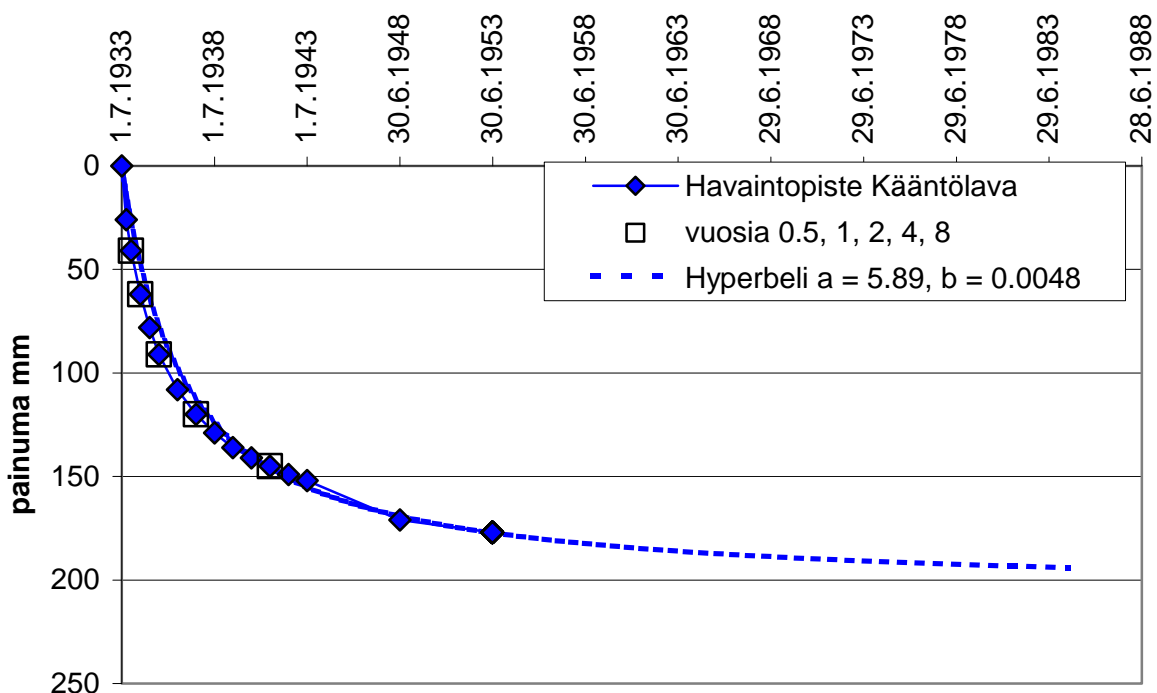
Havaintopiste Käntölava



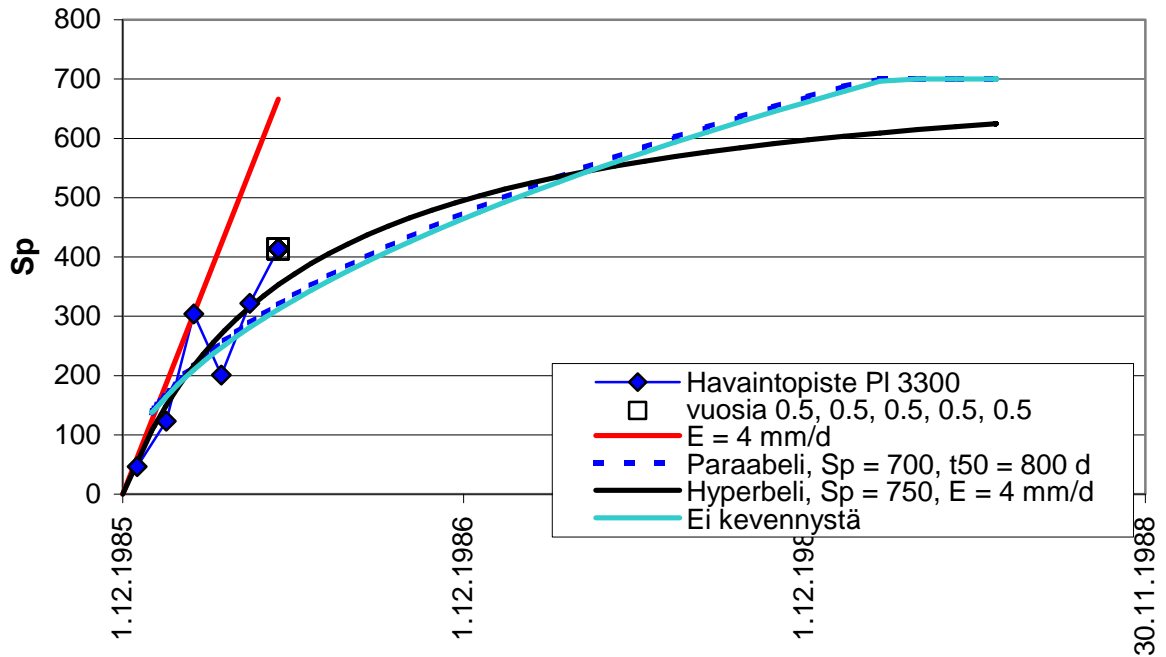
				pain. t (a)	tod. t
				50	50
input			output		
	a	b	Painuma	pain50	virh. mm
Hyperbeli	5.89	4.84E-03	207	194	ei havaint.



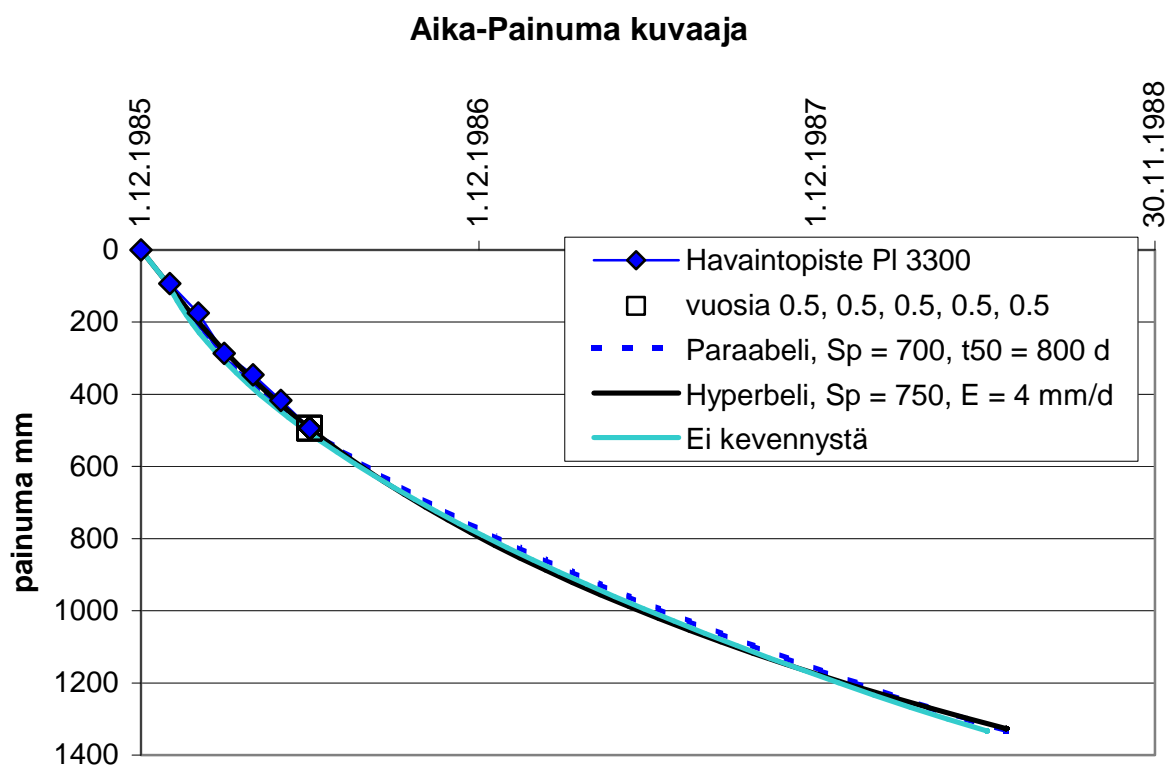
Aika-Painuma kuvaaja



Painumaennuste		Painumapotentiaali				LIITE VII / s. 1		
Naantali-Turku Mt 189, PL3300, 6kk						Havaintopiste PI 3300		▼
● 1-puol. kl	H	w	m (b = 0)	m	alkupai.	t0 (d)	pain. t (a)	tod. t
○ 2-puol. kl	12	100	5.4...9.1	5	100	31	2.24	2.24
input					80			
	Sp	t50/E	rs	B	c _v	pain. 2.24	virh. mm	
Paraabeli	700	800	17	0.292	6.0	1240	ei havaint.	
Hyperbeli	750	4.00	16	0.313		1245	ei havaint.	

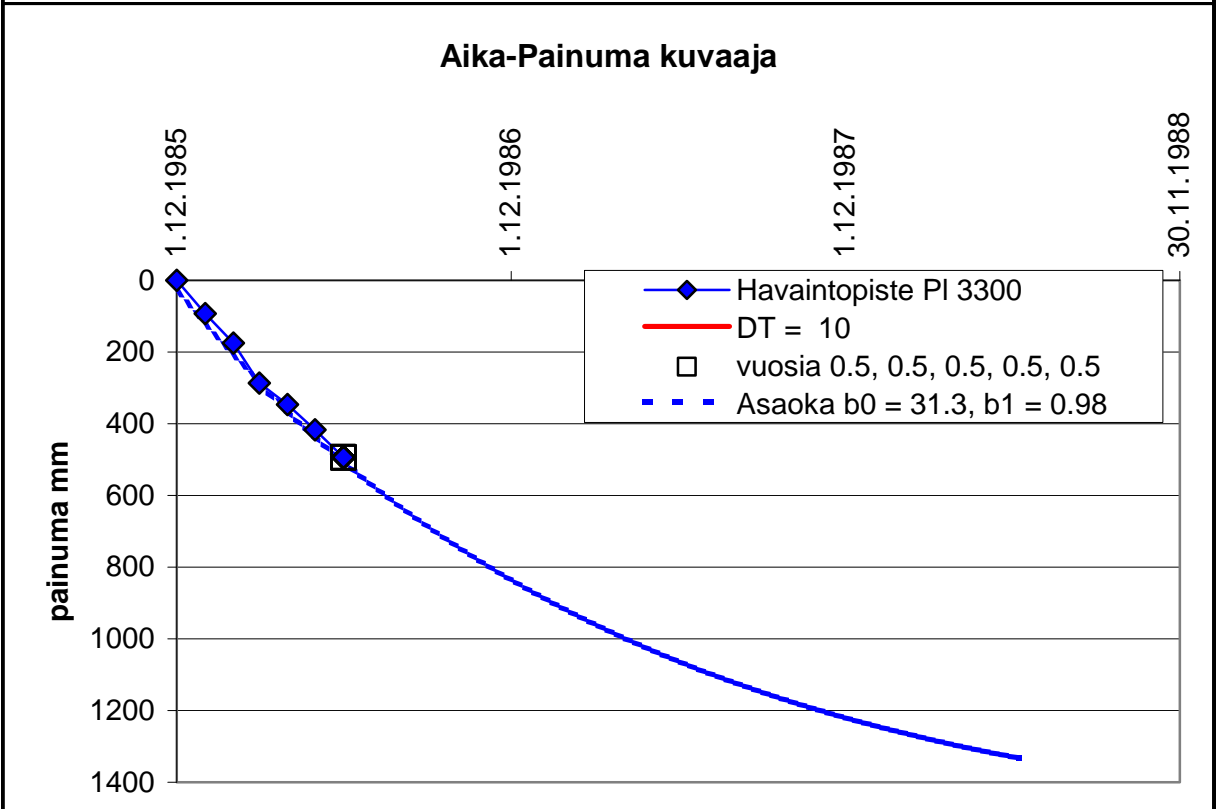
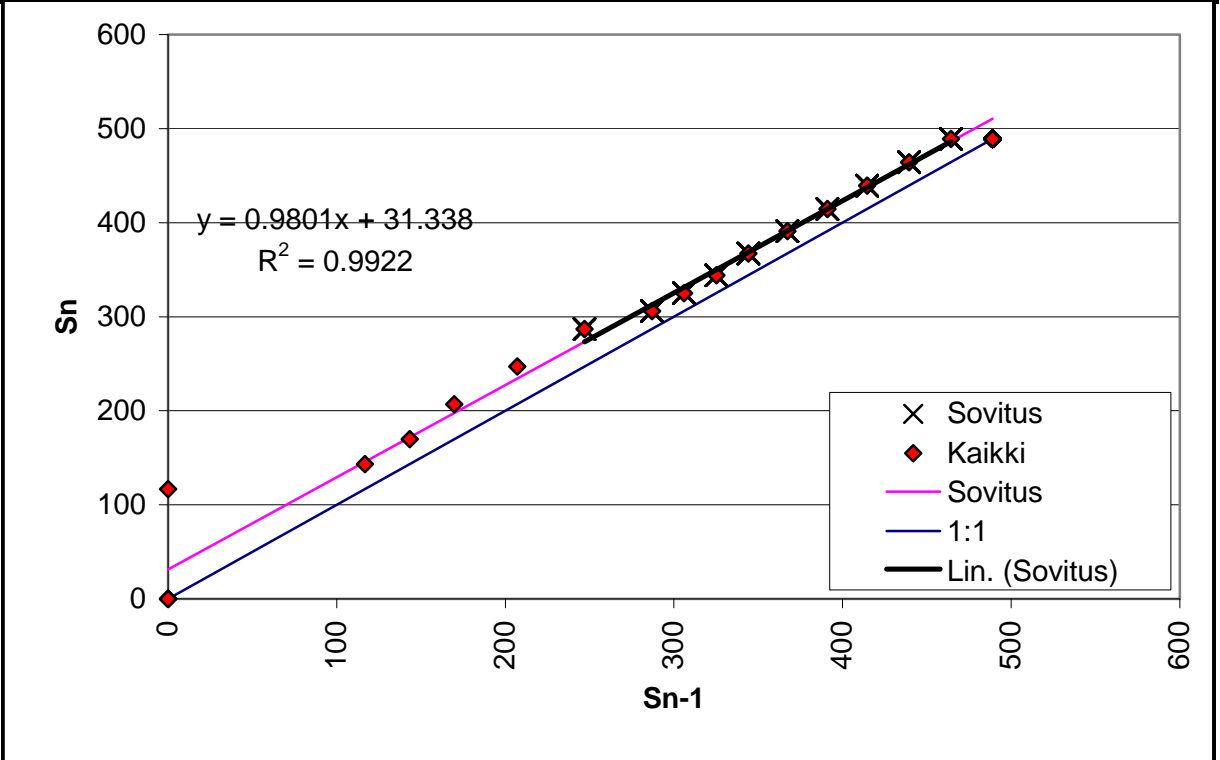


Aika-Painumapotentiaali kuvaaja



Aika-Painuma kuvaaja

				pain. t (a)	tod. t	
				2.24	2.25	
input			output			
	β_0	β_1	t	Prim. Pain.	pain2.25	virh. mm
Asaoka	31.3	0.980	10.00	1576	1279	ei havaint.
	31.3	0.980	10.00			

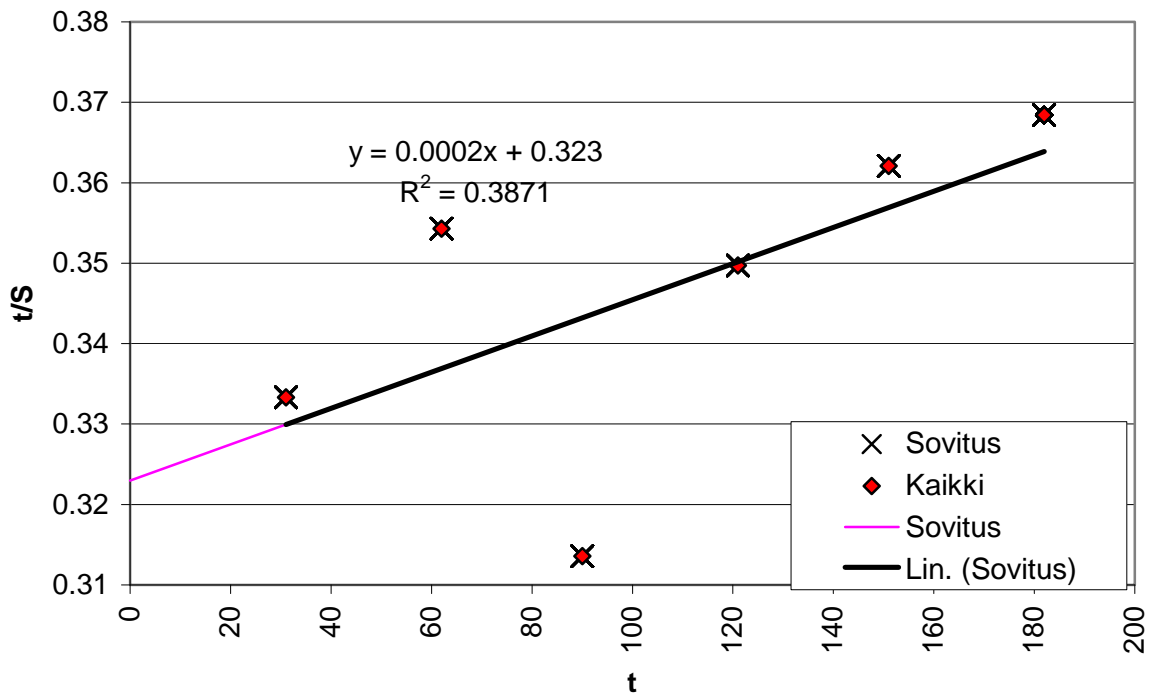


Naantali-Turku Mt 189, PL3300, 6kk

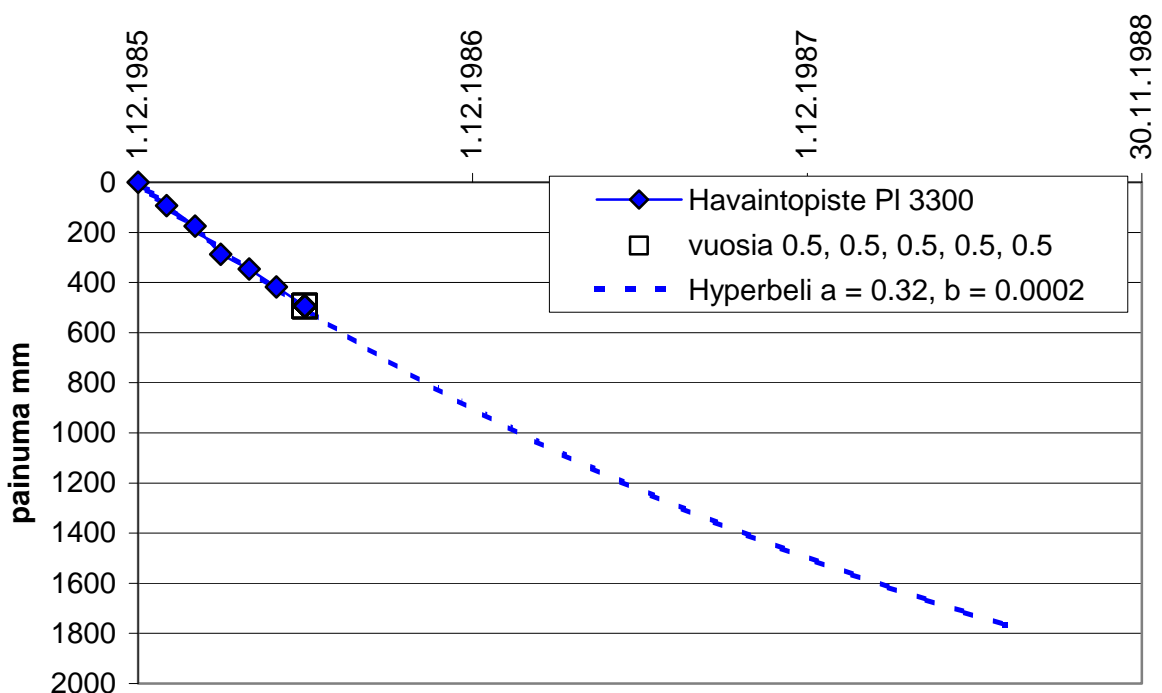
Havaintopiste PI 3300



				pain. t (a)	tod. t
				2.24	2.24
input			output		
	a	b	Painuma	virh. mm	
Hyperbeli	0.32	2.25E-04	4450	1614	ei havaint.



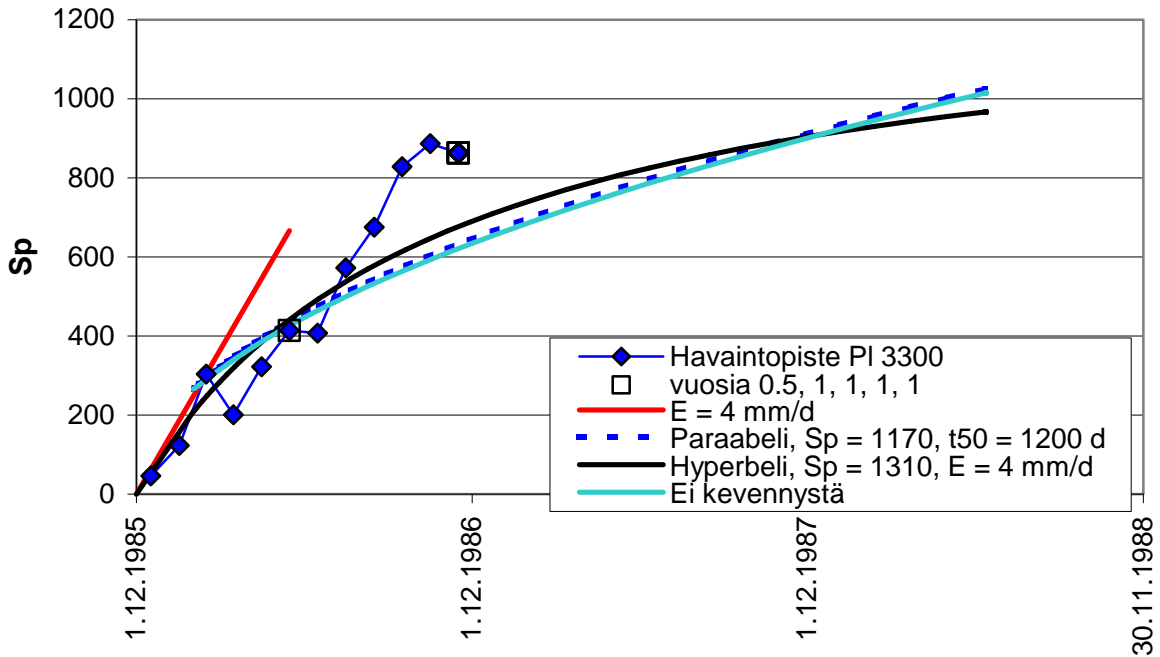
Aika-Painuma kuvaaja



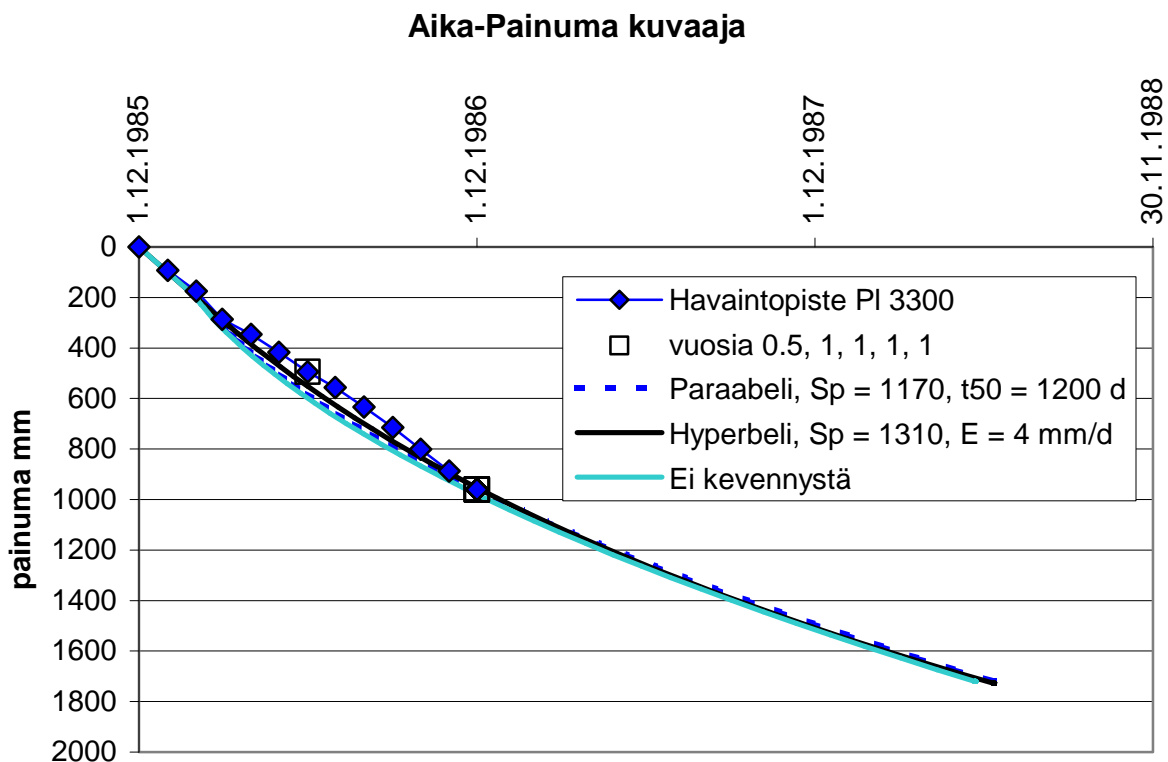
Naantali-Turku Mt 189, PL3300, 1 v

Havaintopiste PI 3300

● 1-puol. kl	H	w	m (b = 0)	m	alkupai.	t0 (d)	pain. t (a)	tod. t
○ 2-puol. kl	12	100	5.4...9.1	5	200	62	2.24	2.24
input				80				
	Sp	t50/E	rs	B	c _v	pain. 2.24	virh. mm	
Paraabeli	1170	1200	10	0.488	4.0	1600	ei havaint.	
Hyperbeli	1310	4.00	9	0.546		1613	ei havaint.	

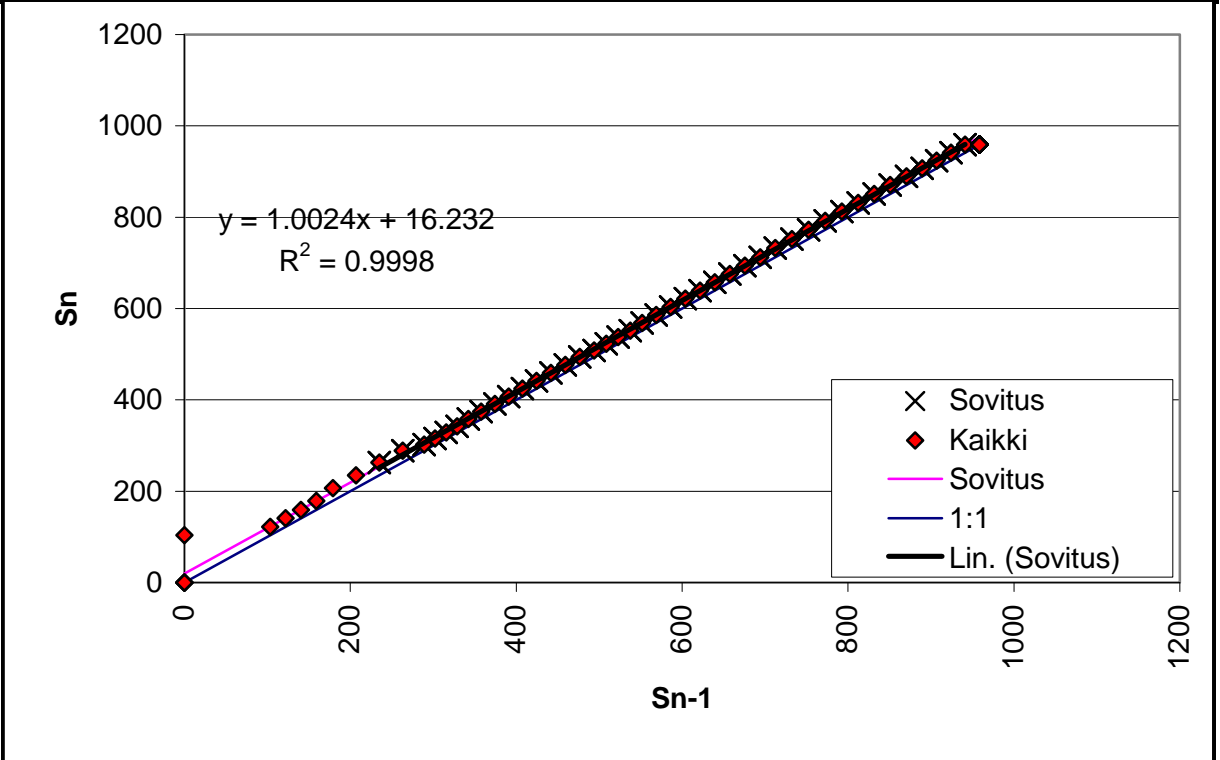


Aika-Painumapotentiaali kuvaaja

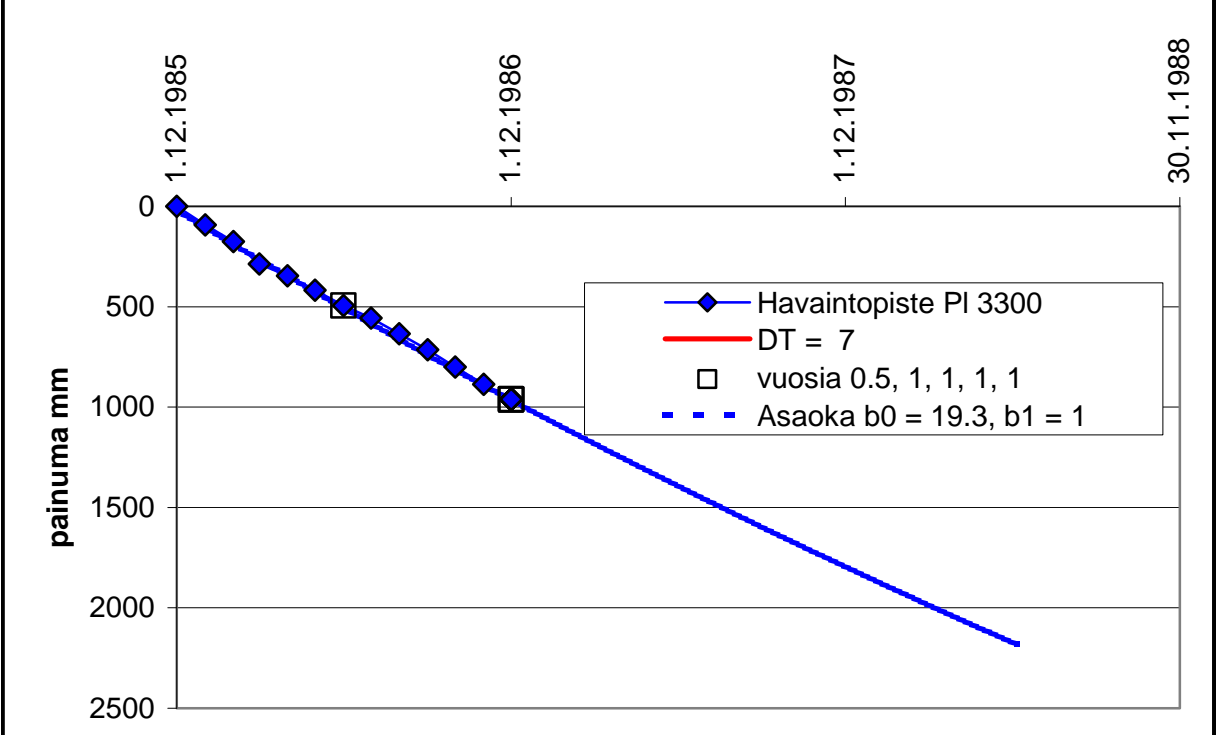


Aika-Painuma kuvaaja

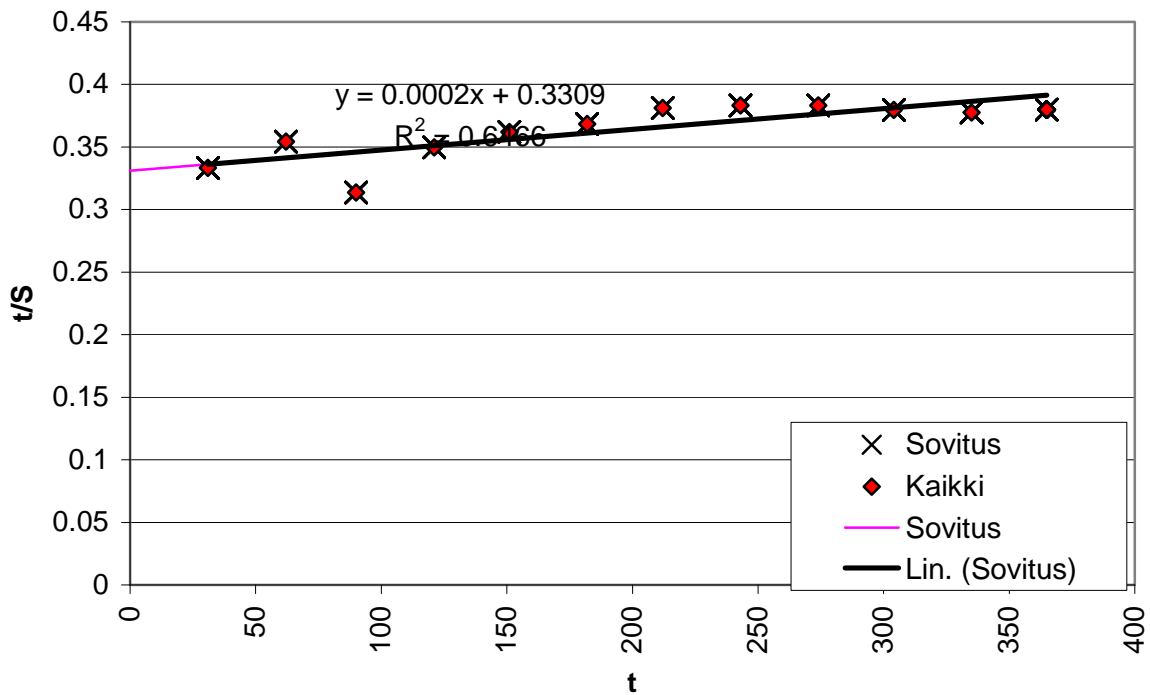
				pain. t (a)	tod. t	
				2.24	2.24	
input			output			
	β_0	β_1	t	Prim. Pain.	pain2.24	virh. mm
Asaoka	19.3	0.998	7.00	7895	1745	ei havaint.
	19.3	0.998	7.00			



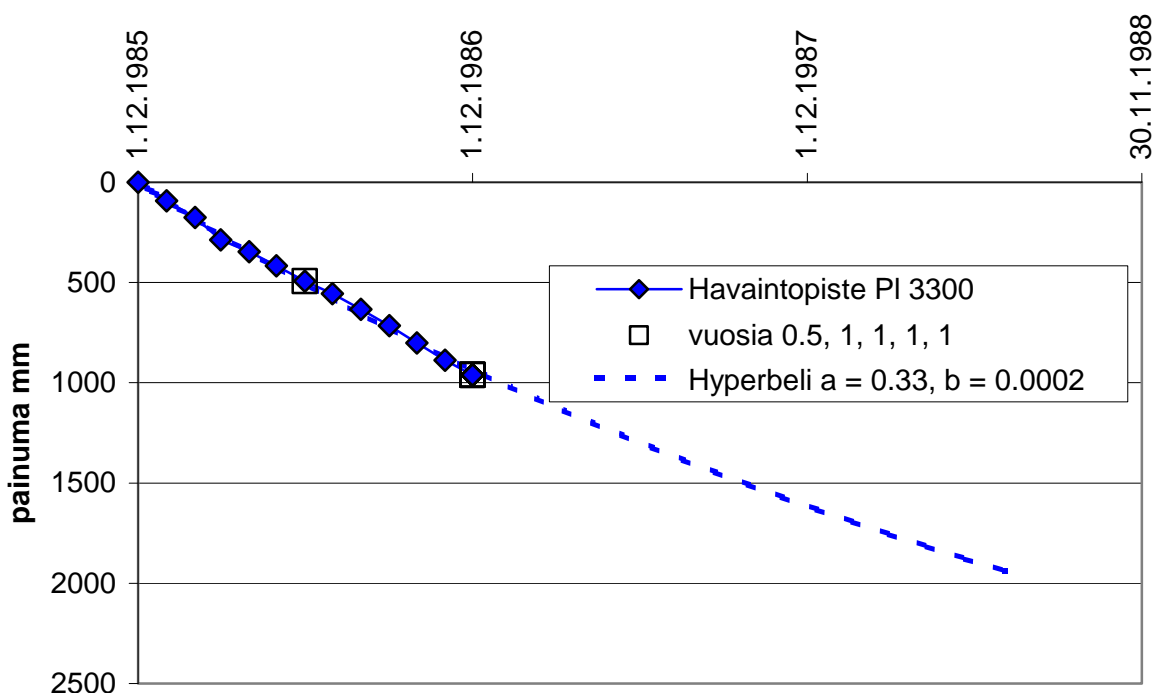
Aika-Painuma kuvaaja



Painumaennuste		Hyperbeli		LIITE VII / s. 6	
Naantali-Turku Mt 189, PL3300, 1 v				Havaintopiste PI 3300	
				pain. t (a)	tod. t
				2.24	2.24
input			output		
	a	b	Painuma	virh. mm	
Hyperbeli	0.33	1.66E-04	6029	1753	ei havaint.



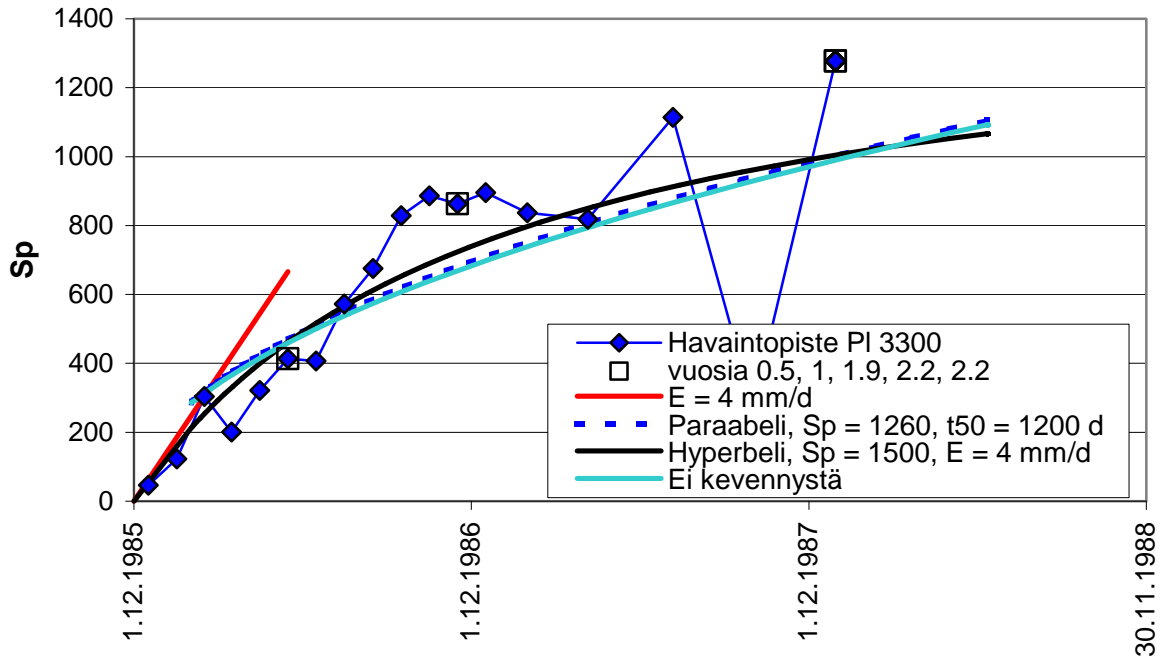
Aika-Painuma kuvaaja



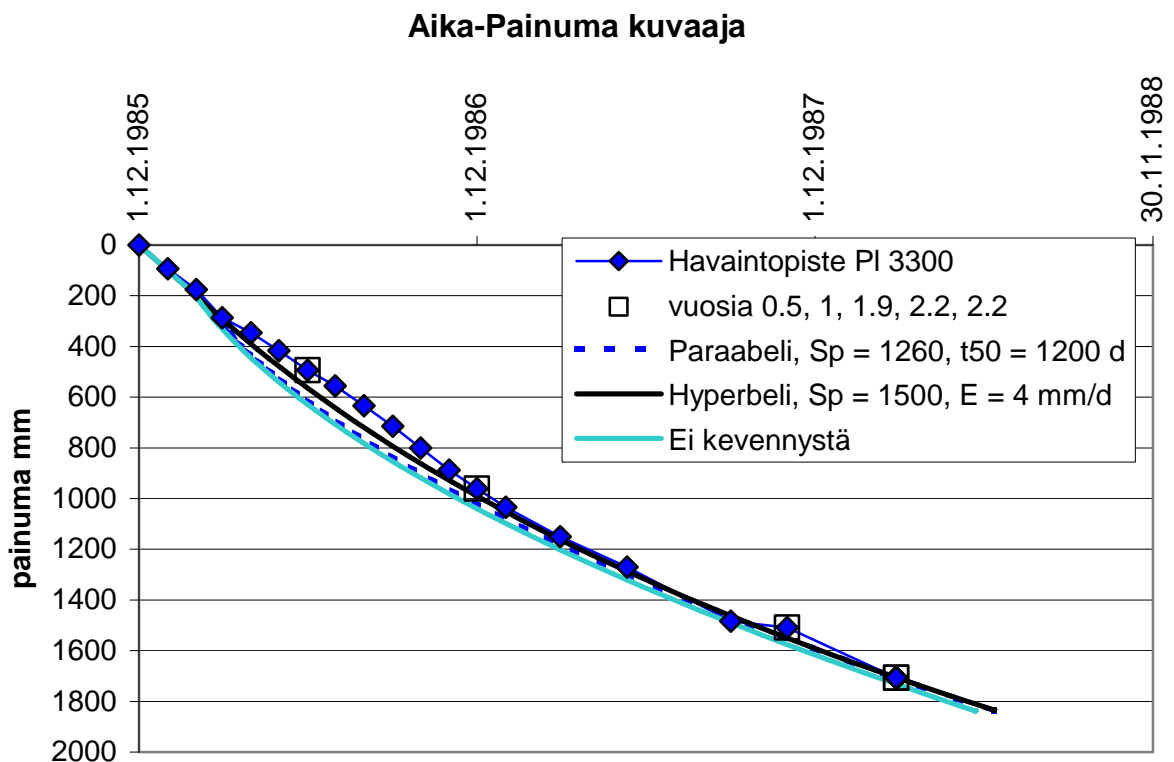
Naantali-Turku Mt 189, PL3300, 2 v

Havaintopiste PI 3300

● 1-puol. kl	H	w	m (b = 0)	m	alkupai.	t0 (d)	pain. t (a)	tod. t
○ 2-puol. kl	12	100	5.4...9.1	5	200	62	2.24	2.24
input					80			
	Sp	t50/E	rs	B	c _v	pain. 2.24	virh. mm	
Paraabeli	1260	1200	10	0.525	4.0	1707	0	
Hyperbeli	1500	4.00	8	0.625		1706	-1	

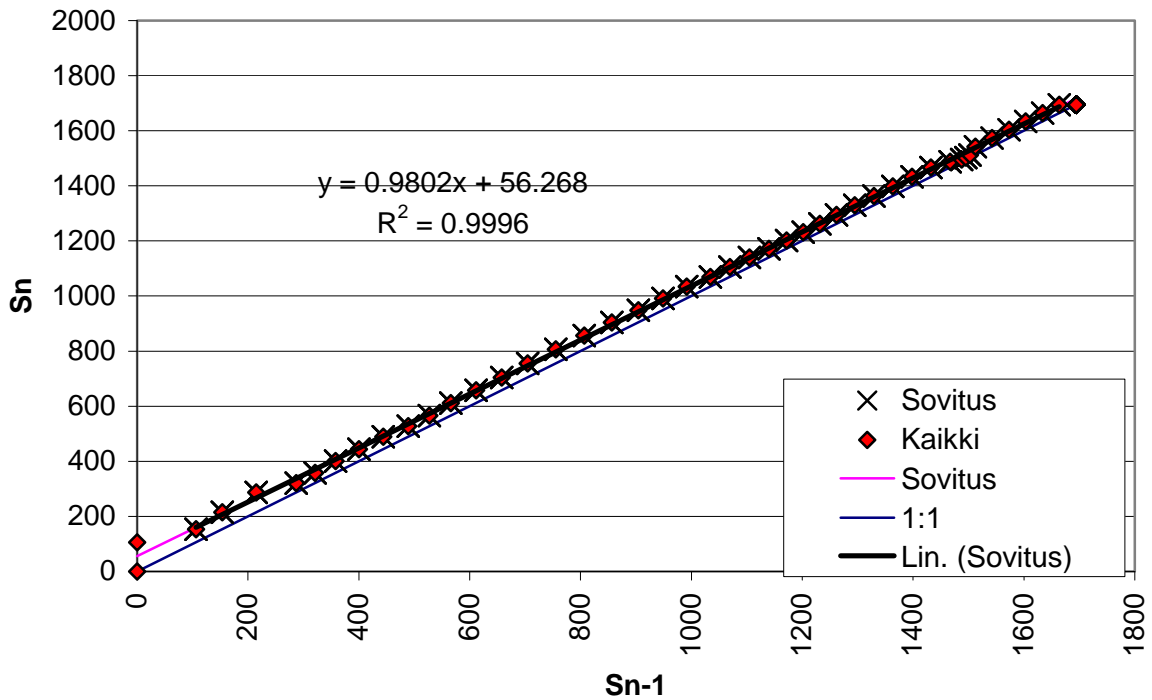


Aika-Painumapotentiaali kuvaaja

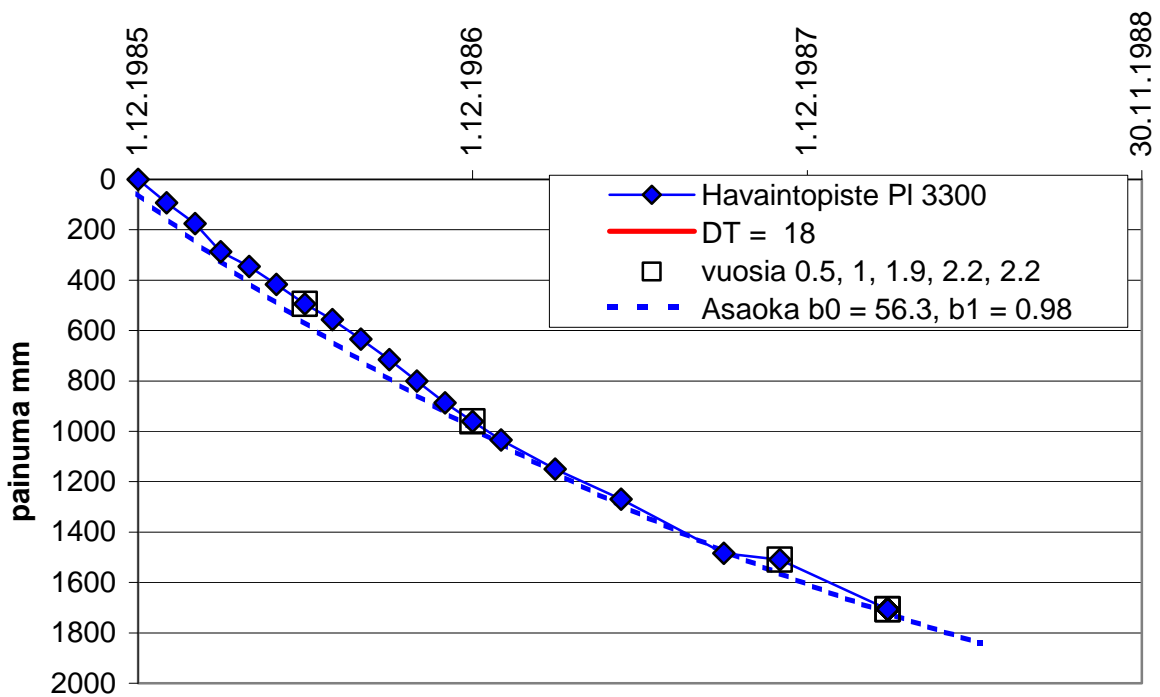


Aika-Painuma kuvaaja

				pain. t (a)	tod. t
				2.24	2.22
input			output		
	β_0	β_1	t	Prim. Pain.	virh. mm
Asaoka	56.3	0.980	18.00	2846	16
	56.3	0.980	18.00		

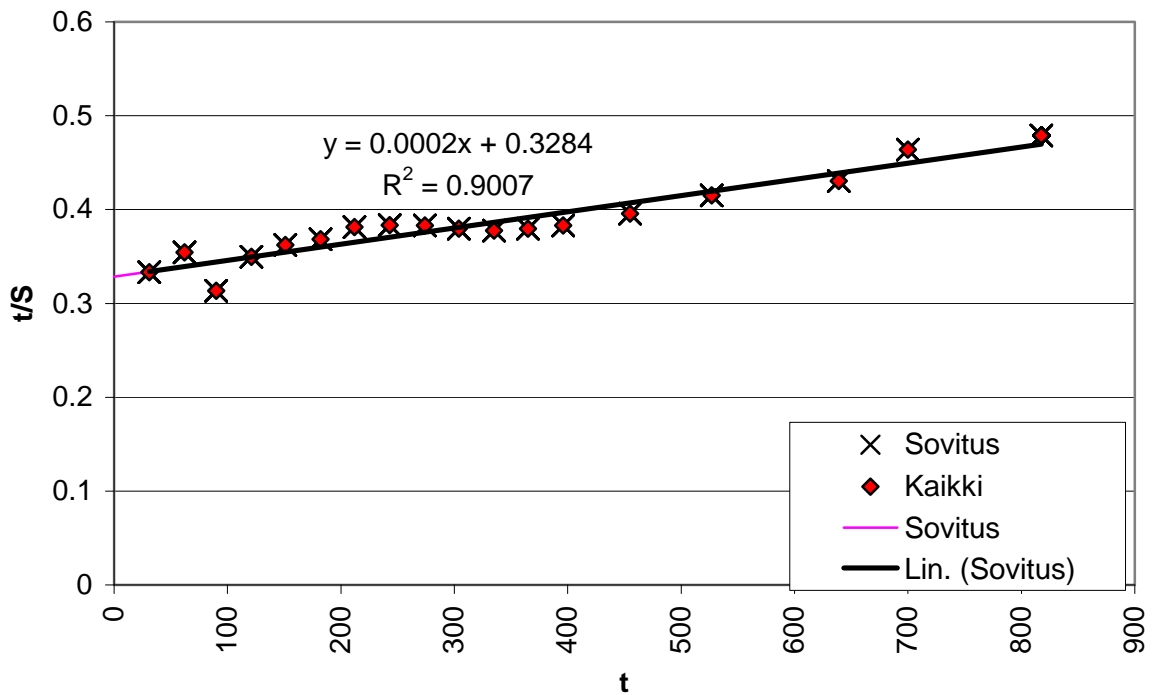


Aika-Painuma kuvaaja

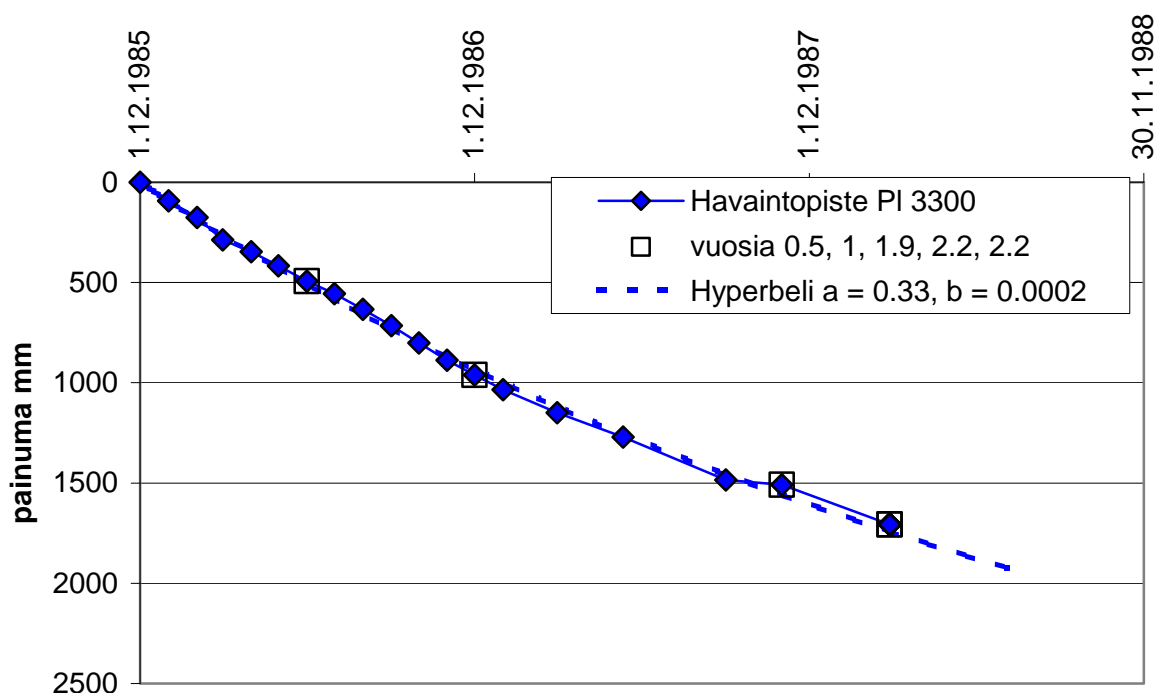




				pain. t (a)	tod. t
				2.24	2.24
input			output		
	a	b	Painuma	virh. mm	
Hyperbeli	0.33	1.73E-04	5793	1741	34



Aika-Painuma kuvaaja



Painumaennuste

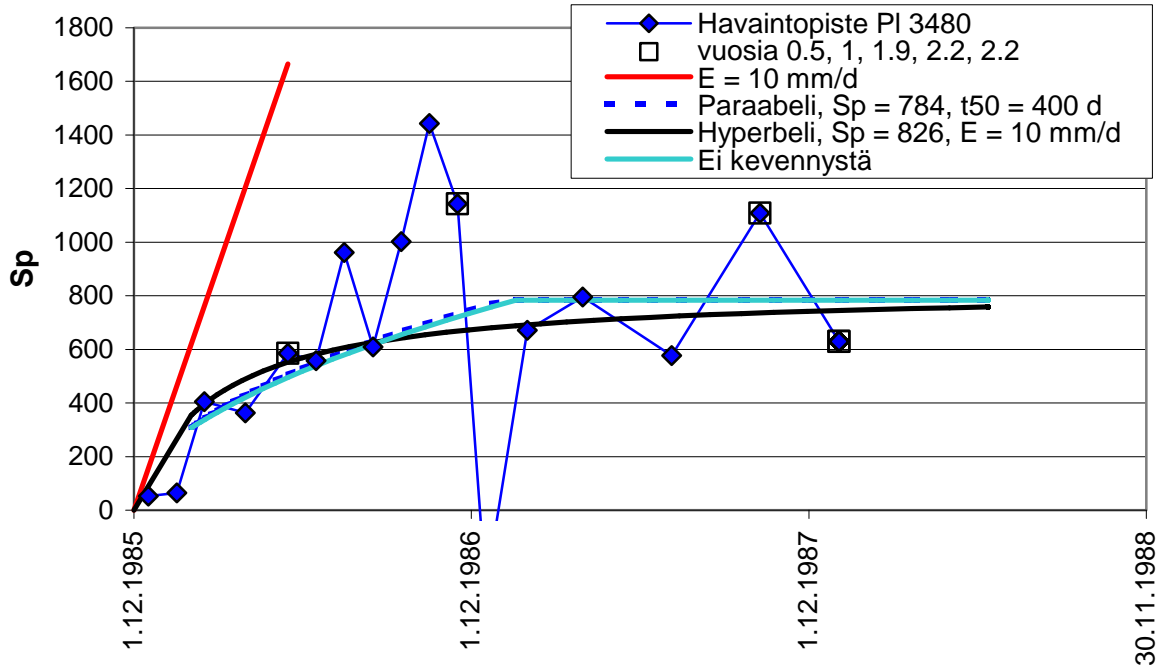
Painumapotentiaali

LIITE VII / s. 10

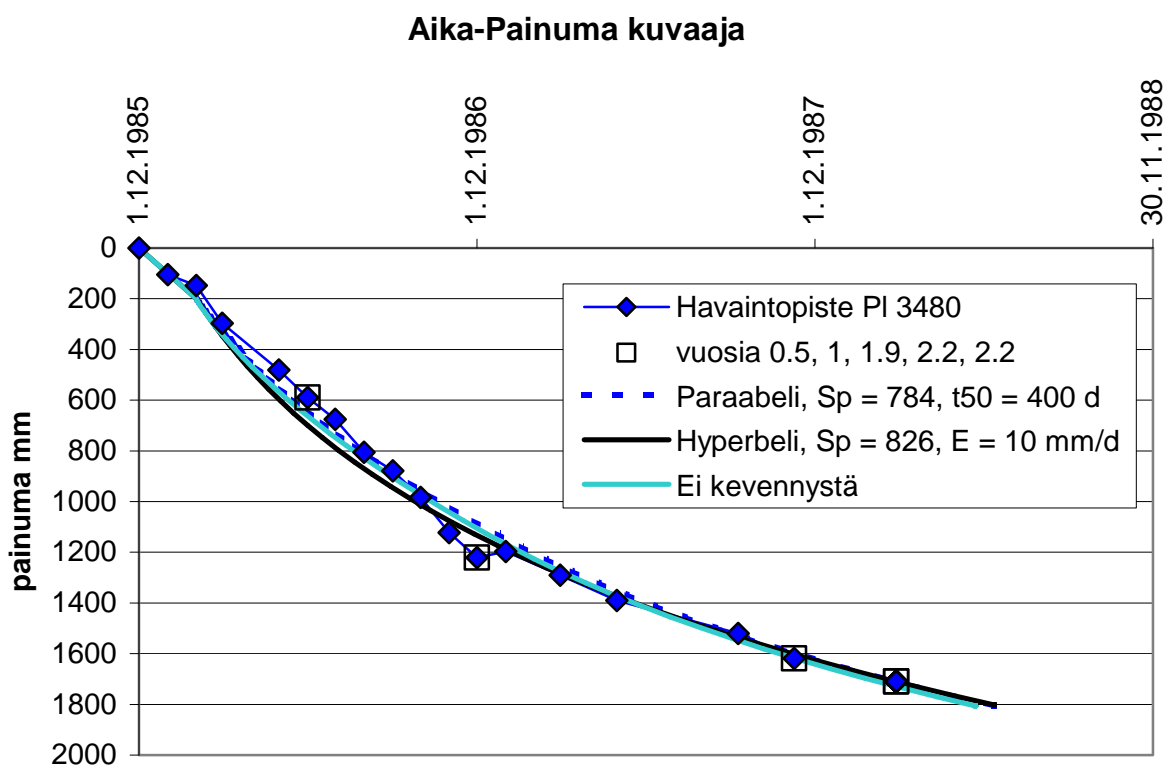
Naantali-Turku Mt 189, PL3300, 2 v

Havaintopiste PI 3480

○ 1-puol. kl	H	w	m (b = 0)	m	alkupai.	t0 (d)	pain. t (a)	tod. t
● 2-puol. kl	11	90	6...10.1	6	200	62	2.24	2.24
input				80				
	Sp	t50/E	rs	B	c _v	pain. 2.24	virh. mm	
Paraabeli	784	400	14	0.428	5.4	1711	1	
Hyperbeli	826	10.00	13	0.451		1711	1	



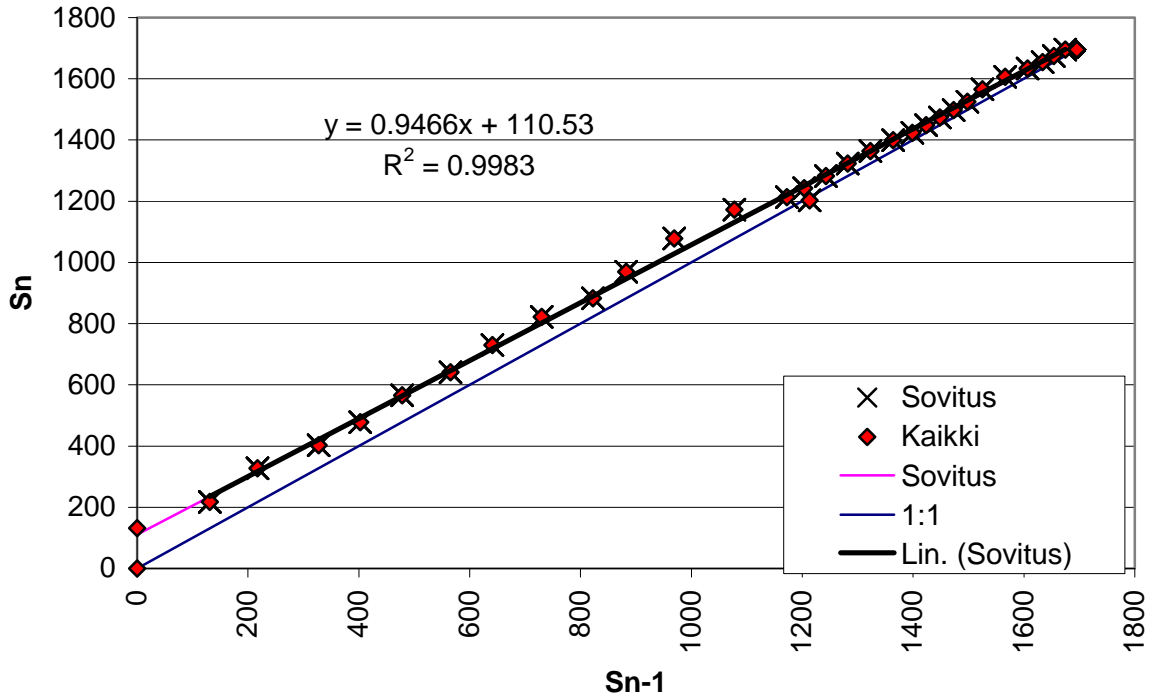
Aika-Painumapotentiaali kuvaaja



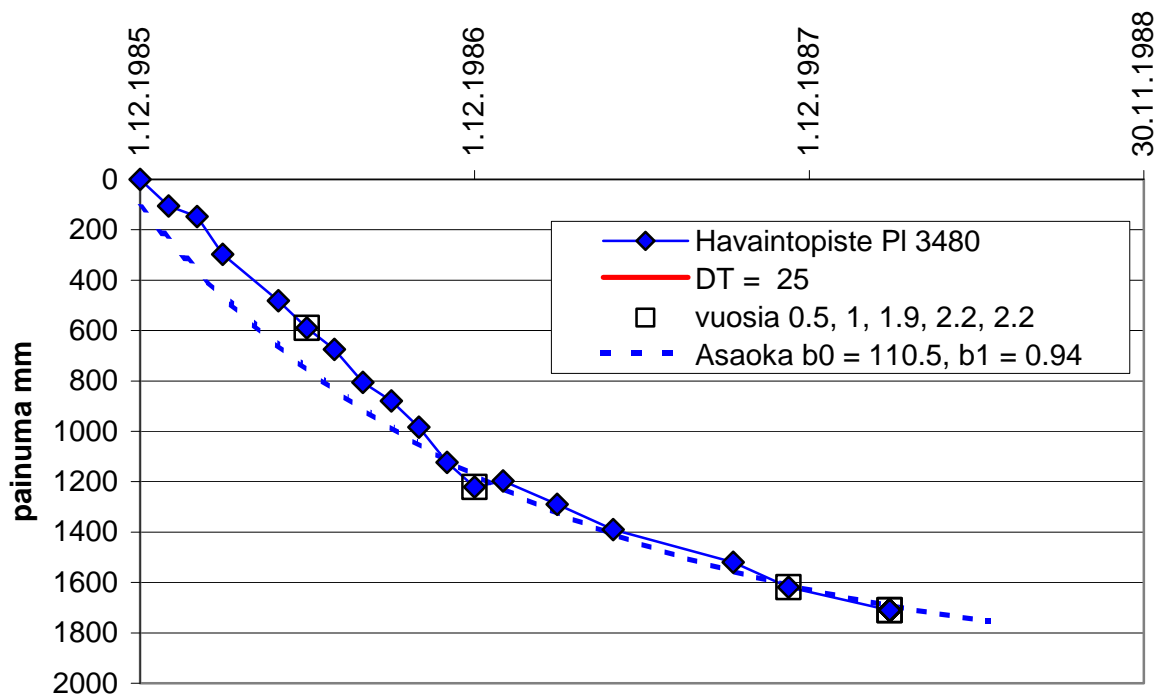
Aika-Painuma kuvaaja



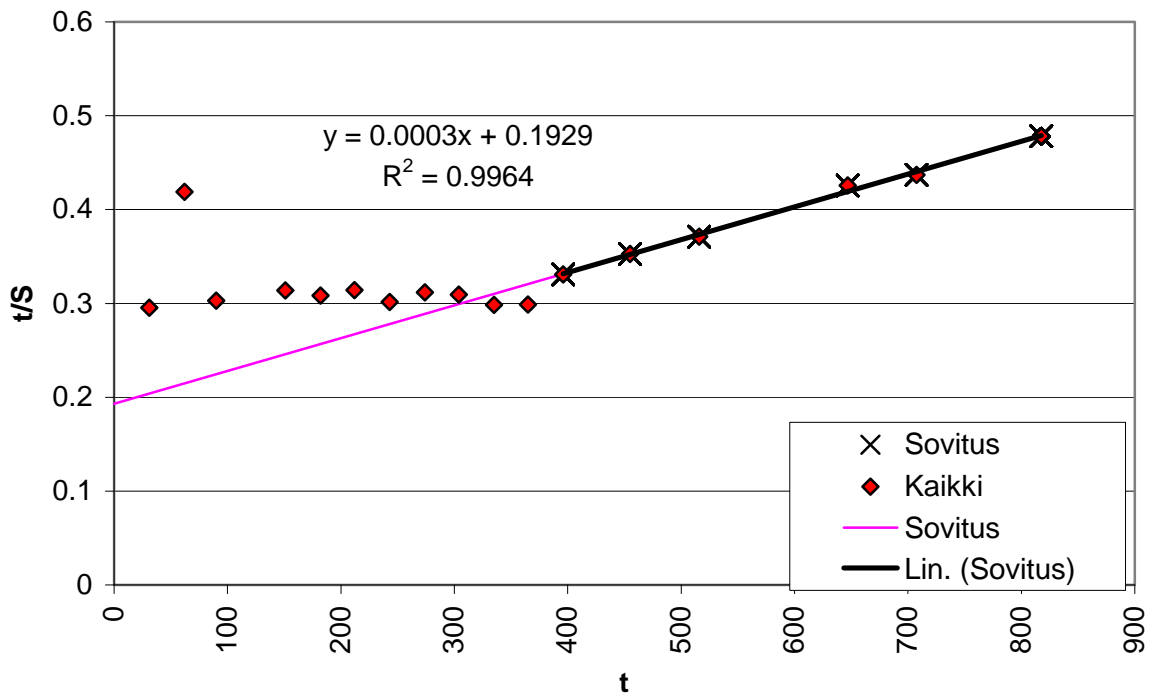
				pain. t (a)		tod. t	
				2.24		2.26	
input				output			
	β_0	β_1	t	Prim. Pain.		pain2.26	virh. mm
Asaoka	110.5	0.944	25.00	1974		1696	ei havaint.
	110.5	0.944	25.00				



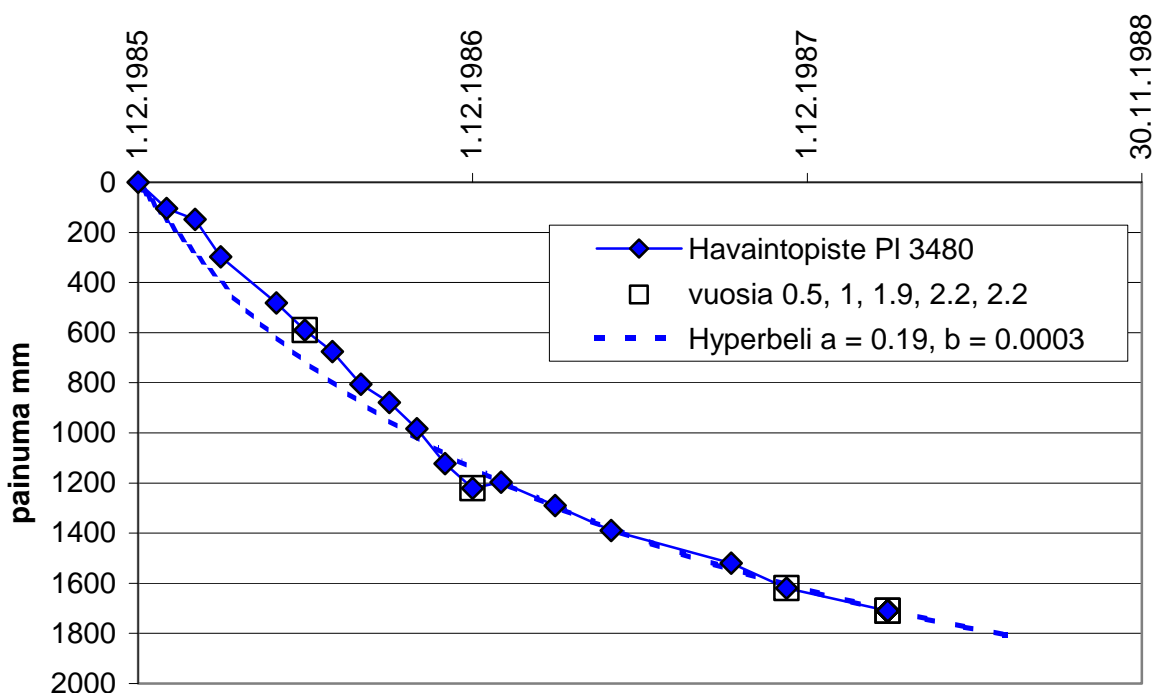
Aika-Painuma kuvaaja



Painumaennuste		Hyperbeli		LIITE VII / s. 12	
Naantali-Turku Mt 189, PL3300, 2 v				Havaintopiste PI 3480	
				pain. t (a)	tod. t
				2.24	2.24
input			output		
	a	b	Painuma	pain2.24	virh. mm
Hyperbeli	0.19	3.50E-04	2859	1707	-3



Aika-Painuma kuvaaja



Painumaennuste

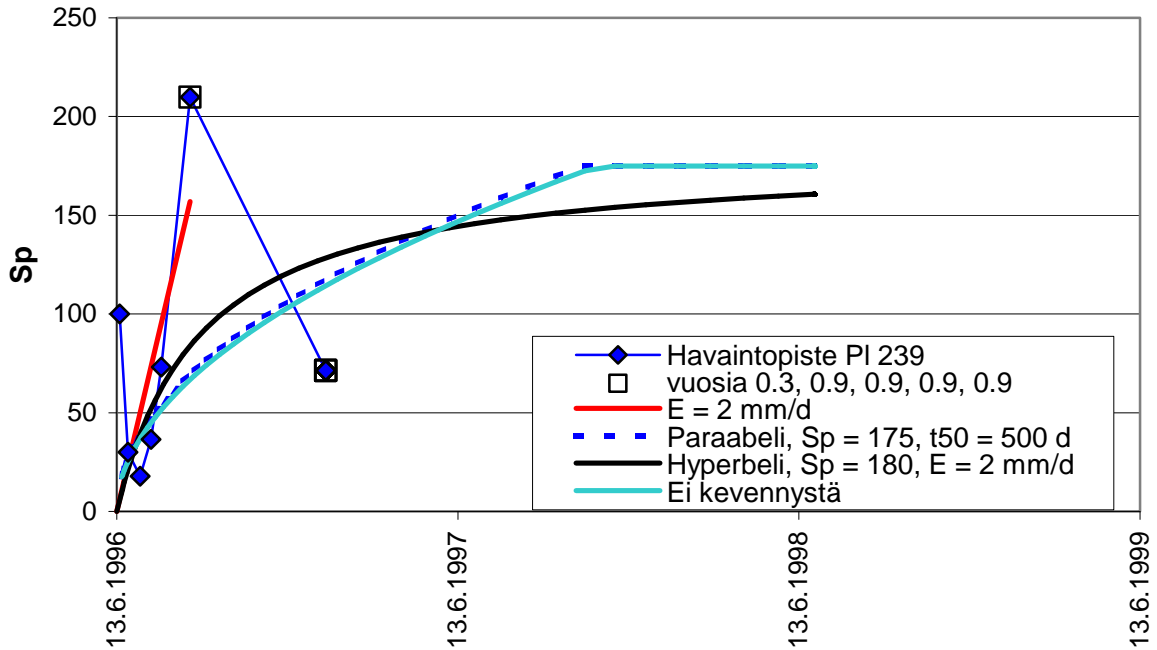
Painumapotentialiaali

LIITE VIII / s. 1

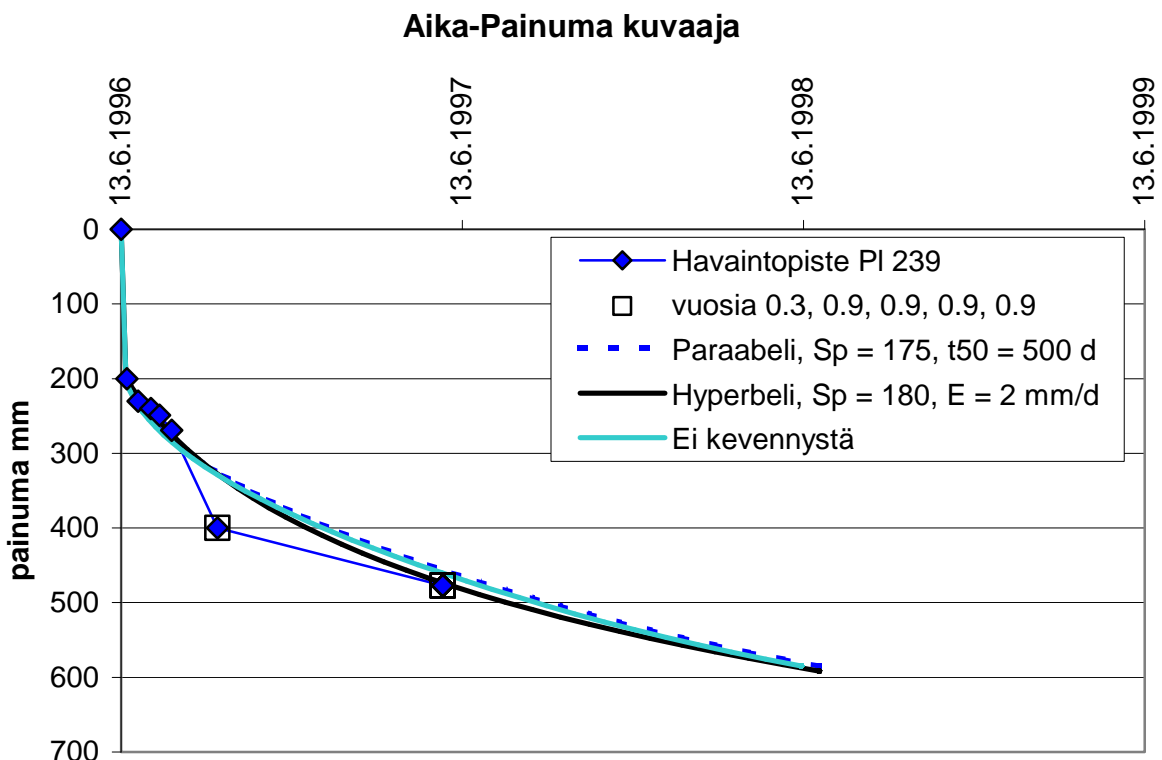
Leteensuo, 1 v

Havaintopiste PI 239

● 1-puol. kl	H	w	m (b = 0)	m	alkupai.	t0 (d)	pain. t (a)	tod. t
○ 2-puol. kl	7.7	500	1.1...1.8	5	200	5	4.3	4.3
input					80			
	Sp	t50/E	rs	B	c _v	pain. 4.3	virh. mm	
Paraabeli	175	500	44	0.114	3.9	715	ei havaint.	
Hyperbeli	180	2.00	43	0.117		715	ei havaint.	



Aika-Painumapotentialiaali kuvaaja

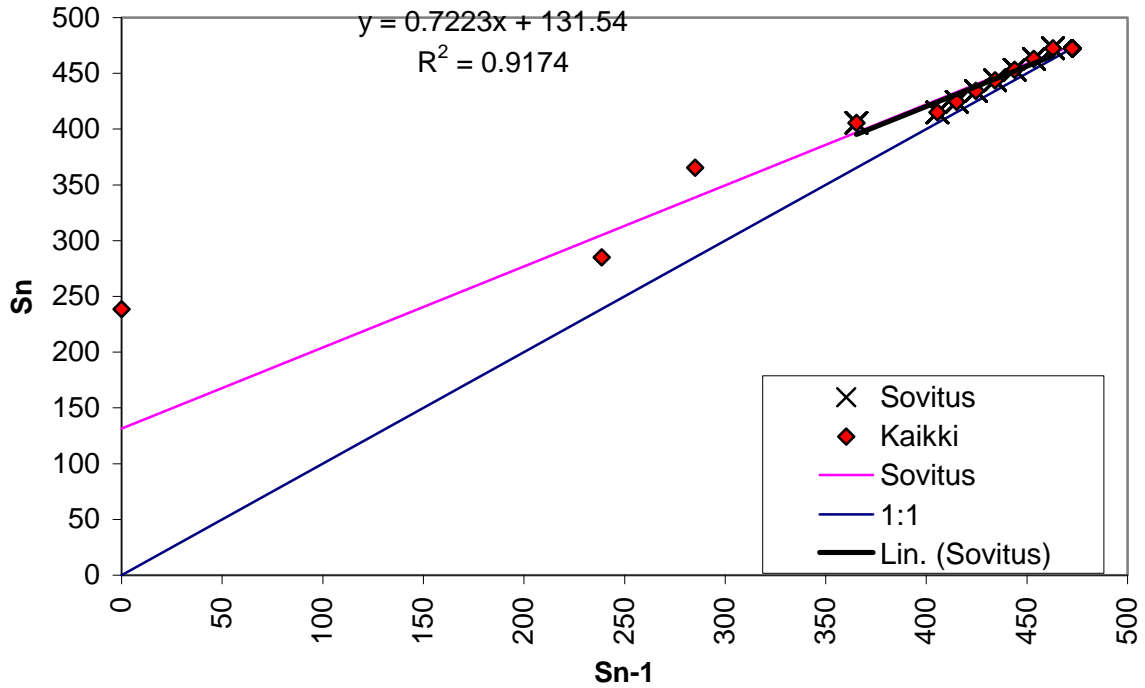


Aika-Painuma kuvaaja

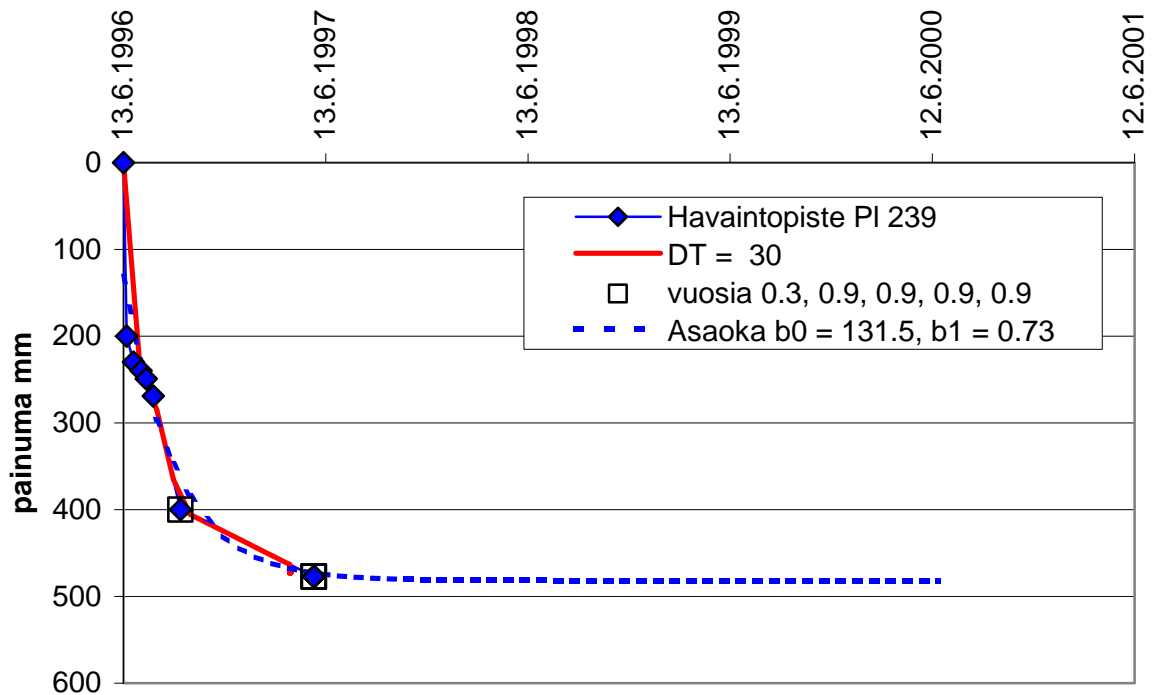


pain. t (a)	tod. t
4.3	4.3

input				output			
	β_0	β_1	t	Prim. Pain.		pain4.3	virh. mm
Asaoka	131.5	0.727	30.00	482		482	ei havaint.
	131.5	0.727	30.00				



Aika-Painuma kuvaaja





pain. t (a)

tod. t

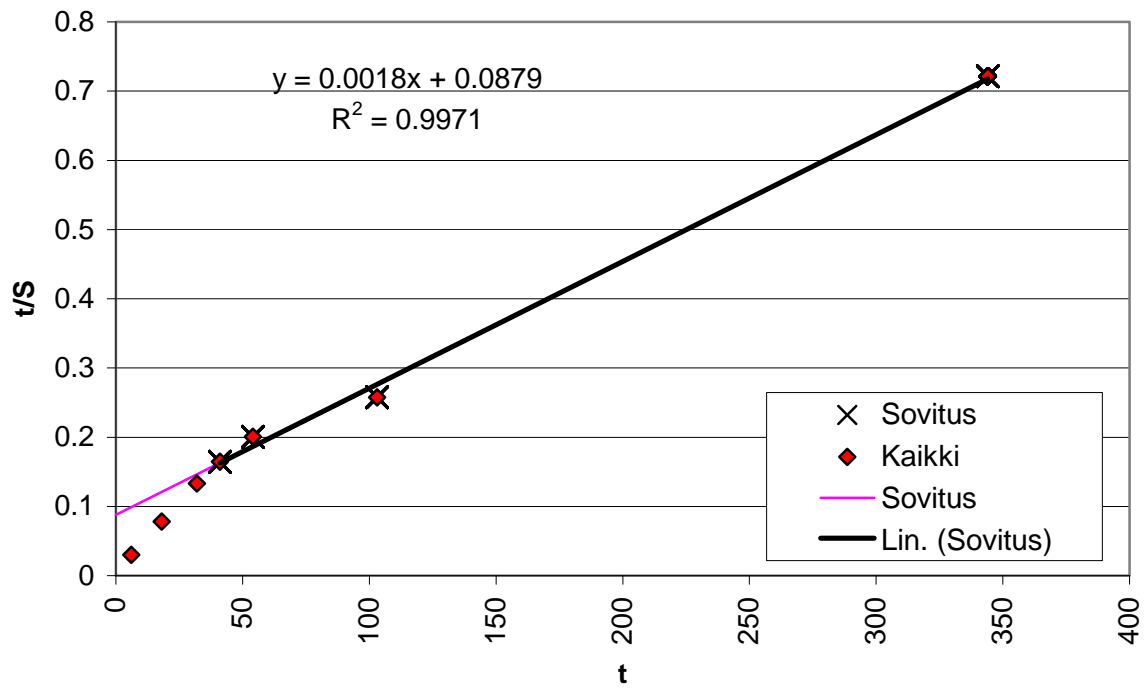
4.3

4.3

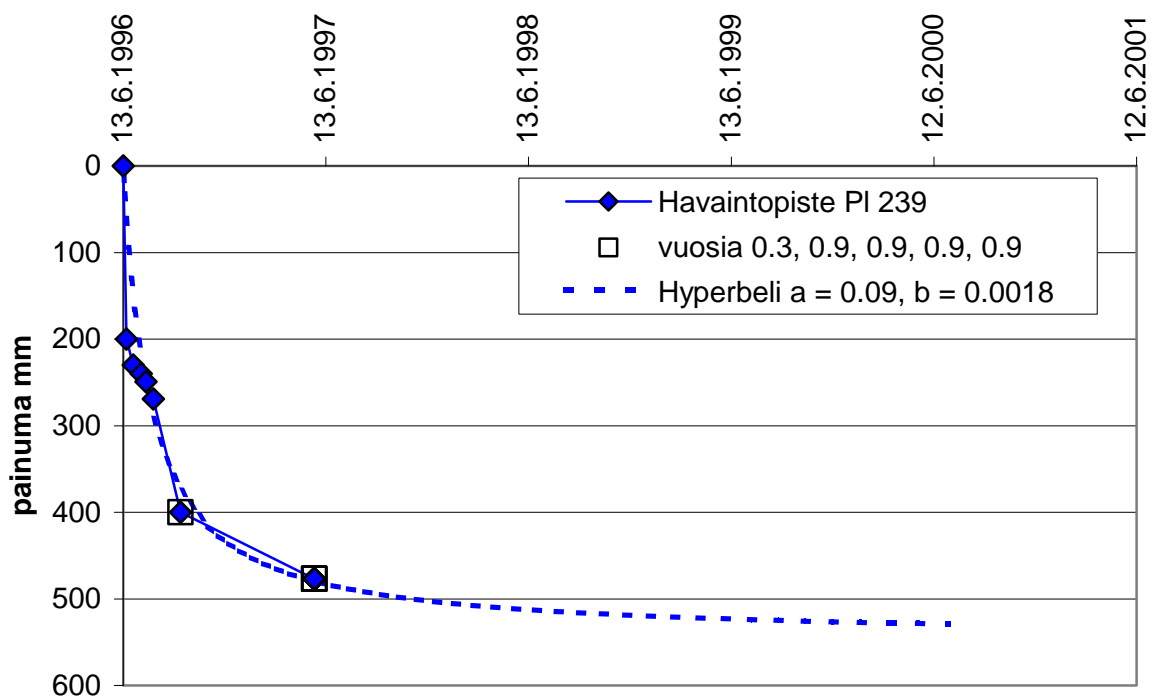
input

output

	a	b	Painuma		pain4.3	virh. mm
Hyperbeli	0.09	1.83E-03	546		530	ei havaint.



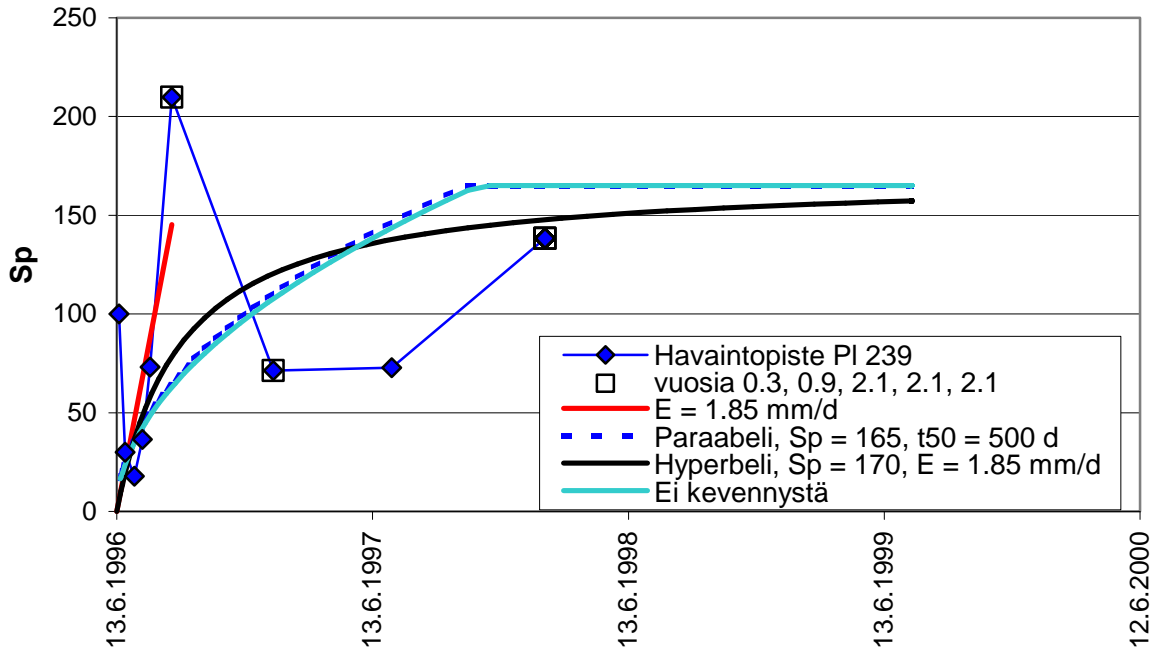
Aika-Painuma kuvaaja



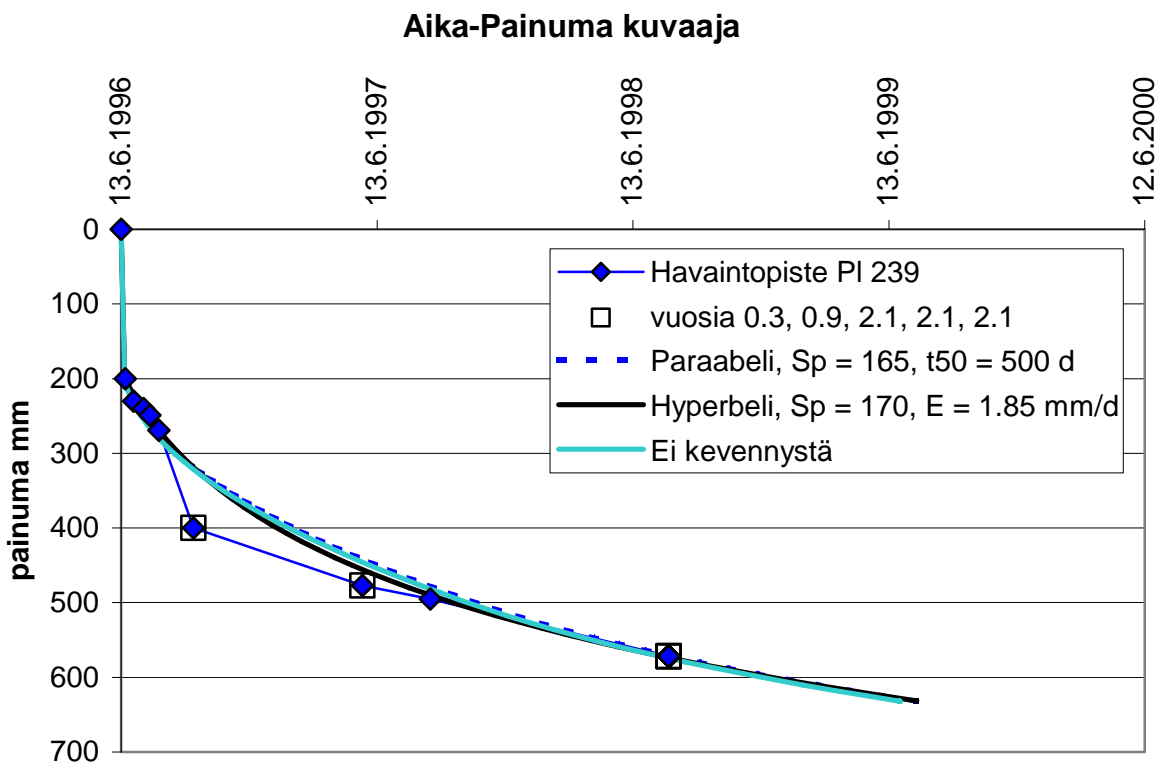
Leteensuo, 2 v

Havaintopiste PI 239

● 1-puol. kl	H	w	m (b = 0)	m	alkupai.	t0 (d)	pain. t (a)	tod. t
○ 2-puol. kl	7.7	500	1.1...1.8	5	200	5	4.3	4.3
input					80			
	Sp	t50/E	rs	B	c _v	pain. 4.3	virh. mm	
Paraabeli	165	500	47	0.107	3.9	686	ei havaint.	
Hyperbeli	170	1.85	45	0.110		683	ei havaint.	



Aika-Painumapotentialiaali kuvaaja

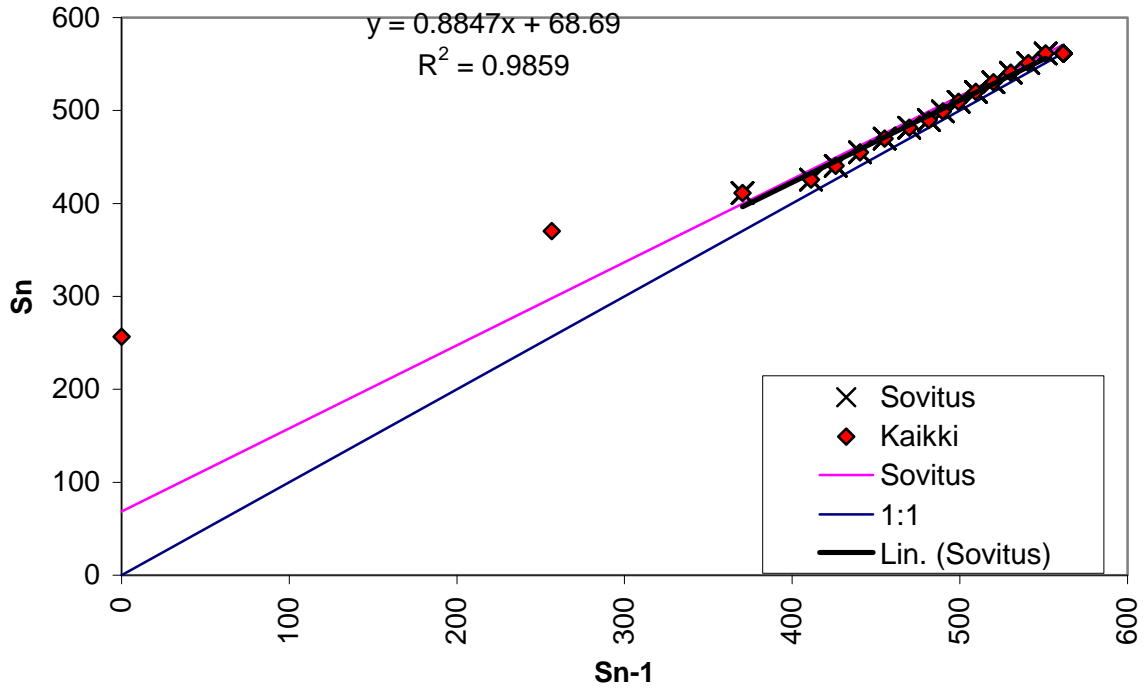


Aika-Painuma kuvaaja

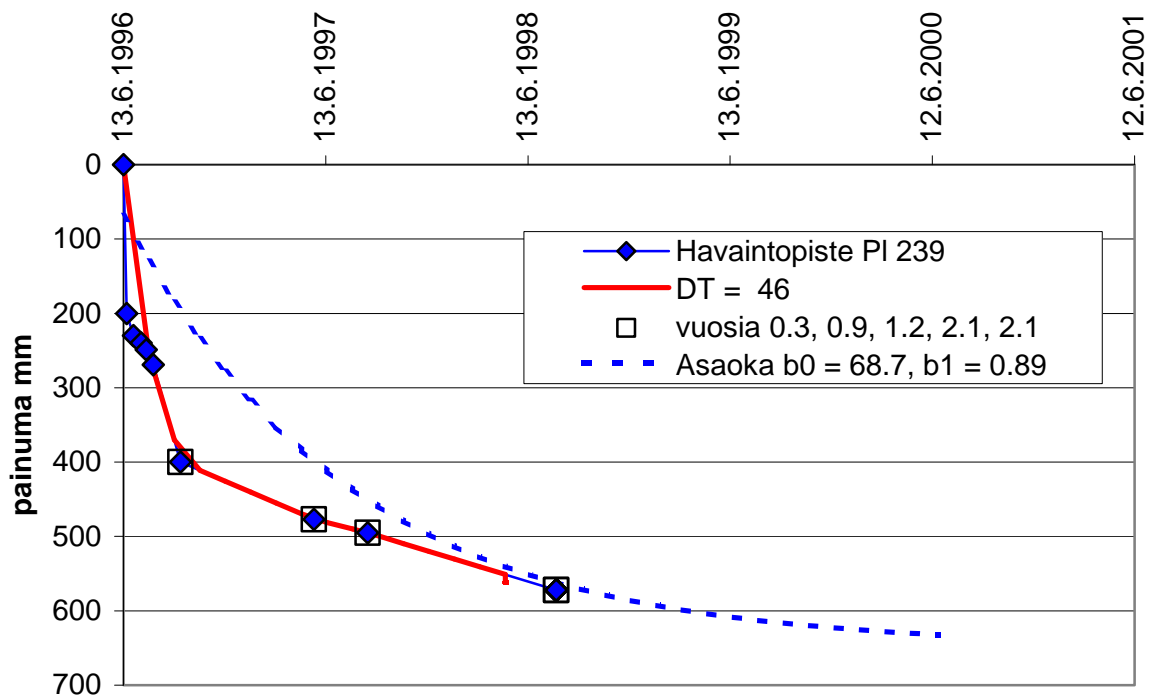


pain. t (a)	tod. t
4.3	4.3

input				output			
	β_0	β_1	t	Prim. Pain.		pain4.3	virh. mm
Asaoka	68.7	0.894	45.94	648		635	ei havaint.
	68.7	0.894	45.94				



Aika-Painuma kuvaaja





pain. t (a)

tod. t

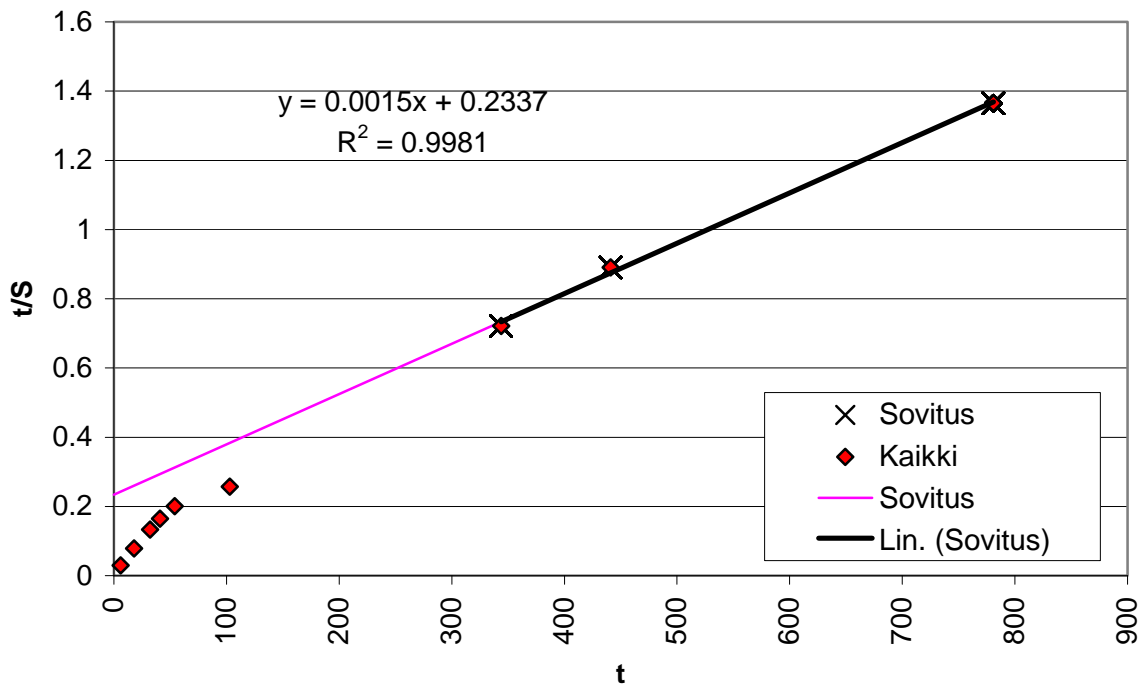
4.3

4.3

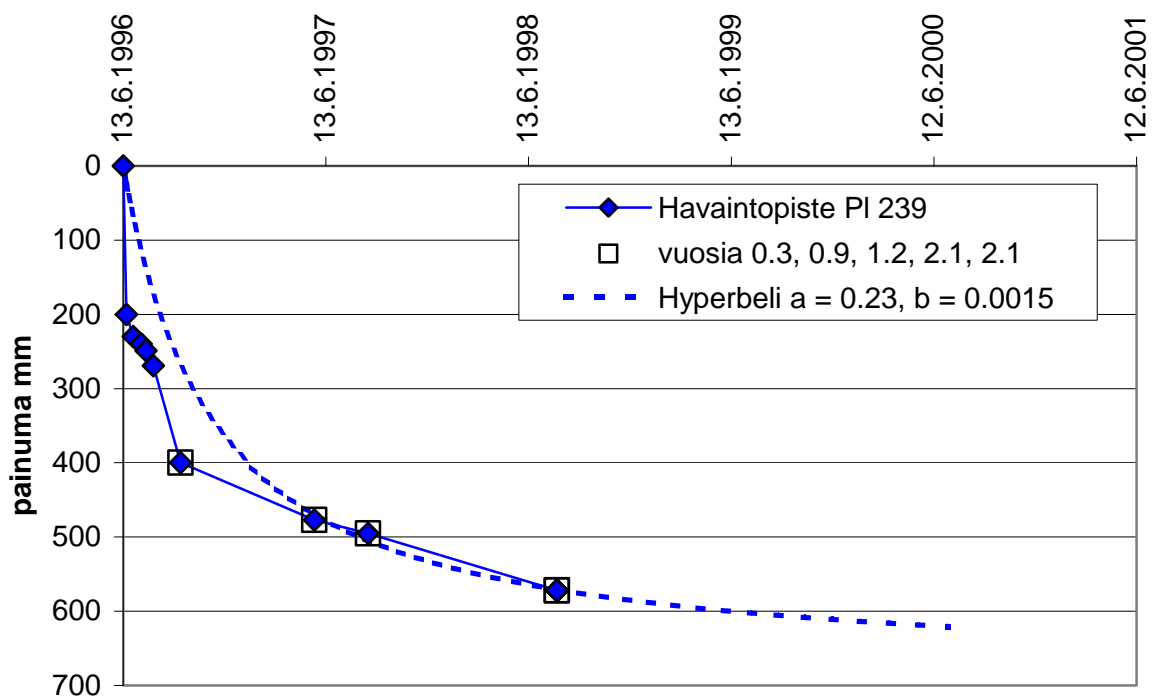
input

output

	a	b	Painuma	pain4.3	virh. mm
Hyperbeli	0.23	1.45E-03	688	624	ei havaint.



Aika-Painuma kuvaaja



Painumaennuste

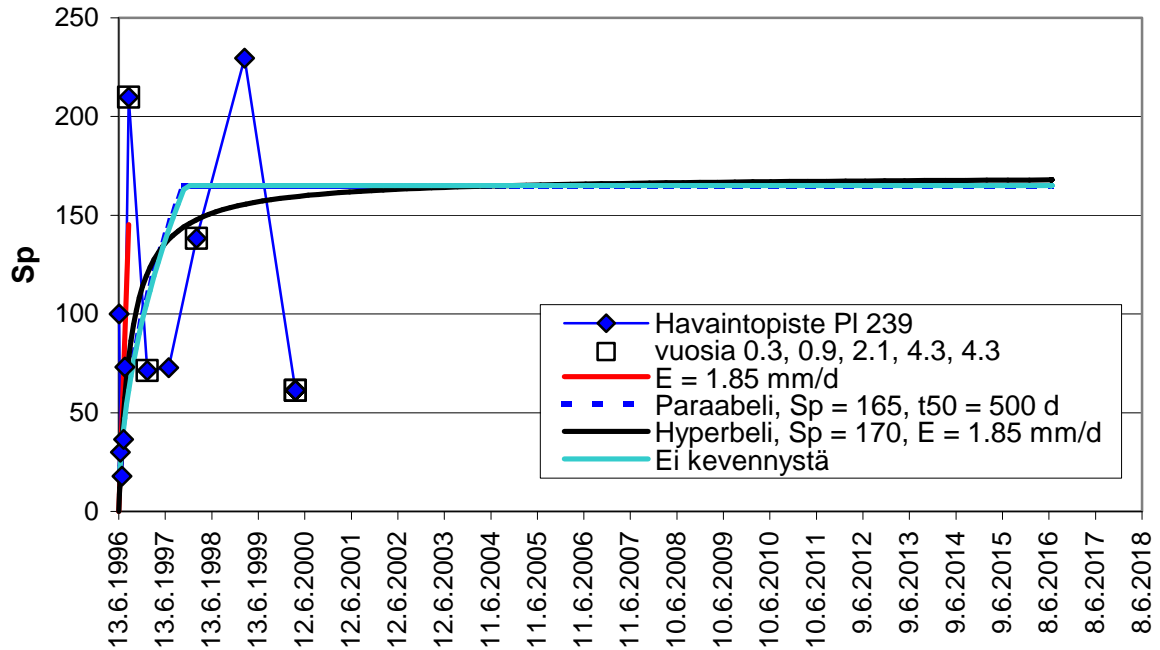
Painumapotentialiaali

LIITE VIII / s. 7

Leteensuo, 4 v

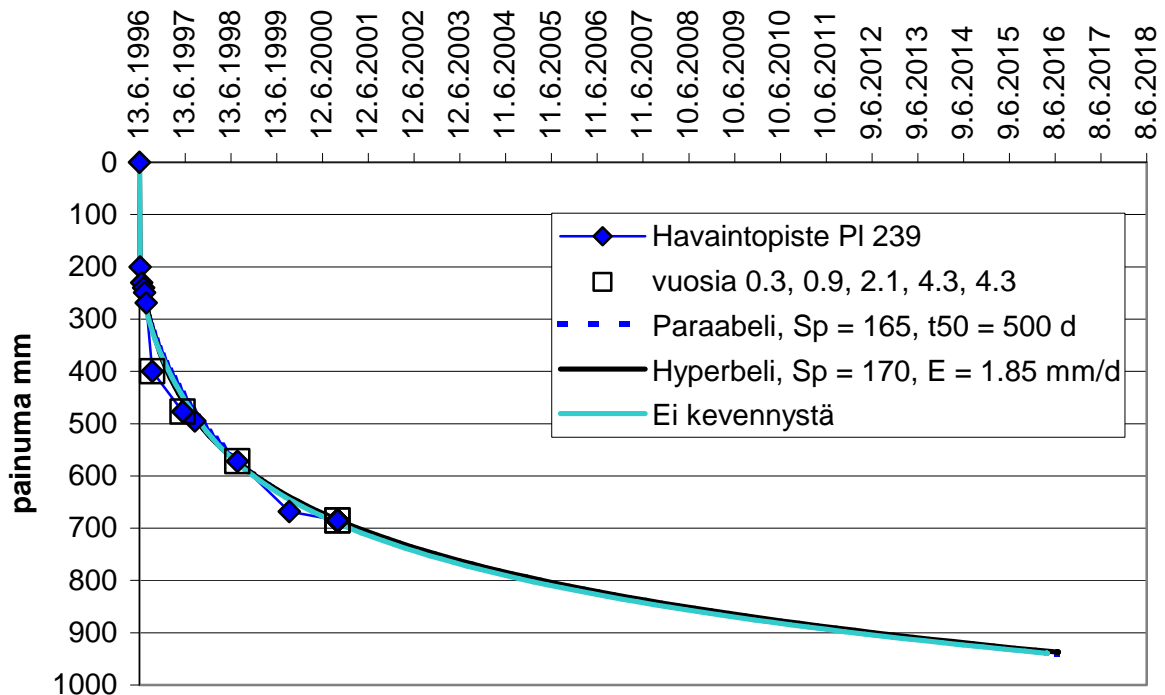
Havaintopiste PI 239

1-puol. kl.	H	w	m (b = 0)	m	alkupai.	t0 (d)	pain. t (a)	tod. t
2-puol. kl.	7.7	500	1.1...1.8	5	200	5	20	20
input				80				
	Sp	t50/E	rs	B	c _v	pain. 20	virh. mm	
Paraabeli	165	500	47	0.107	3.9	939	ei havaint.	
Hyperbeli	170	1.85	45	0.110		937	ei havaint.	



Aika-Painumapotentialiaali kuvaaja

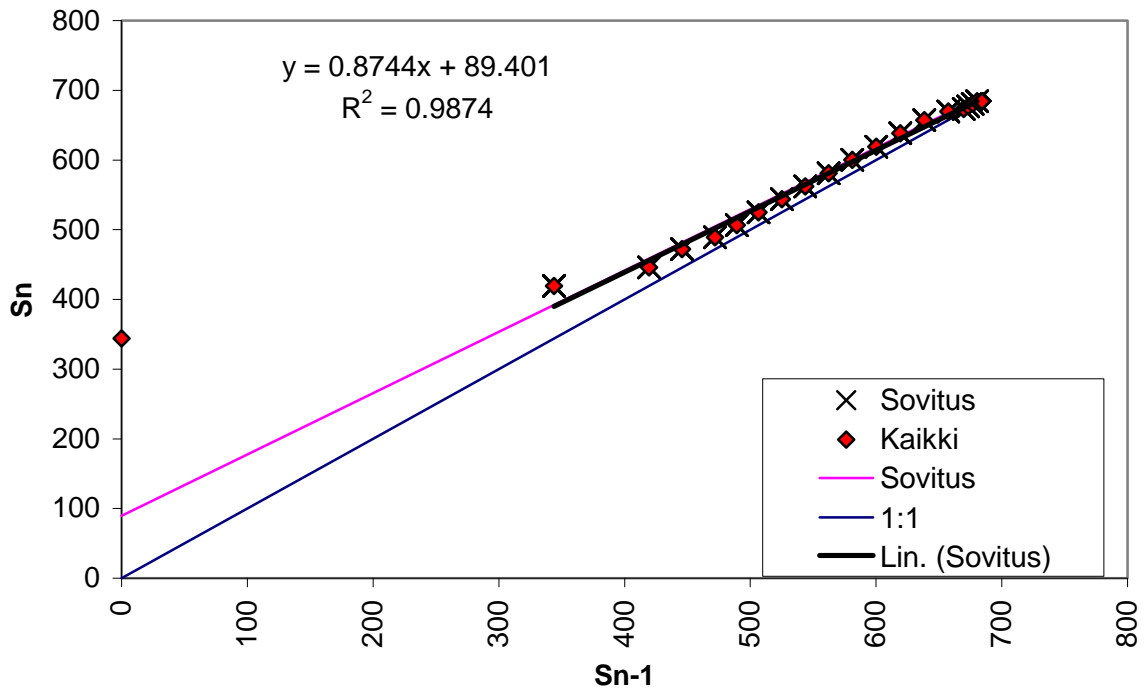
Aika-Painuma kuvaaja



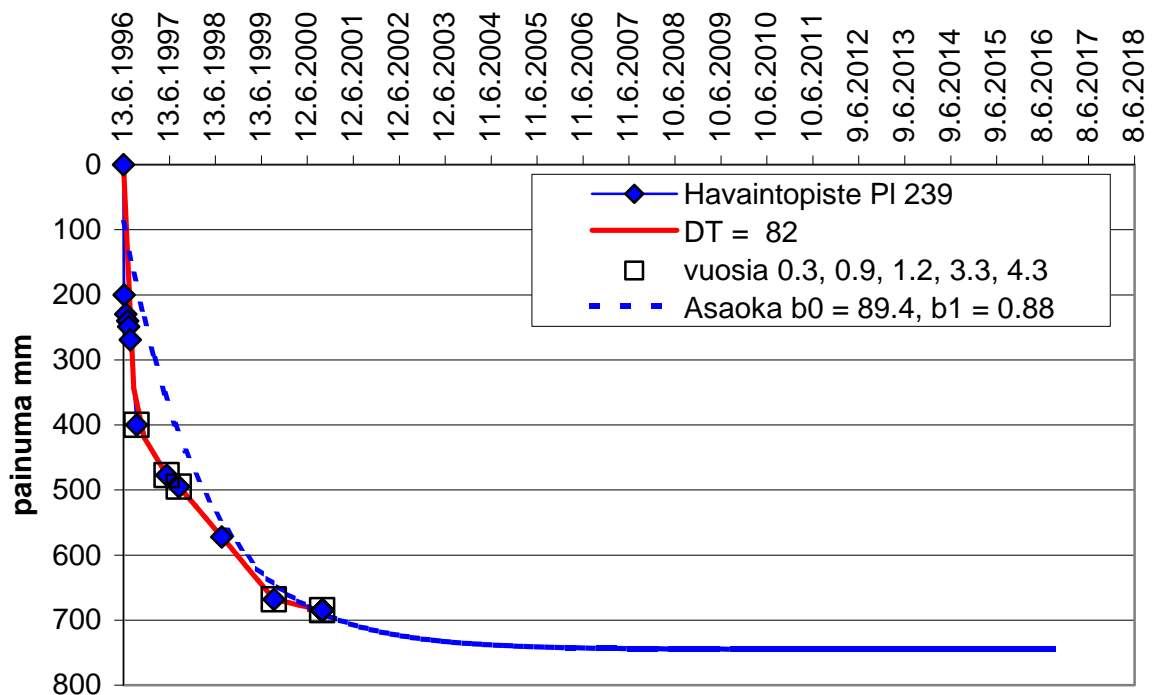


pain. t (a)	tod. t
20	20

input				output			
	β_0	β_1	t	Prim. Pain.		pain20	virh. mm
Asaoka	89.4	0.880	82.01	745		745	ei havaint.
	89.4	0.880	82.01				



Aika-Painuma kuvaaja





pain. t (a)

tod. t

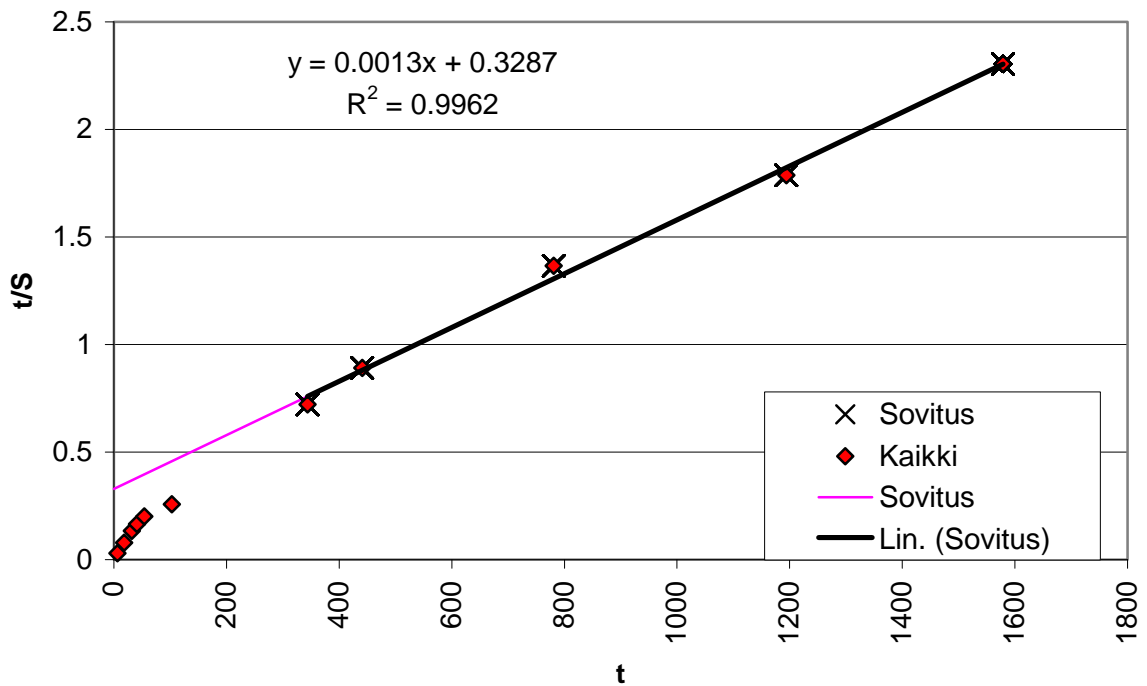
20

20

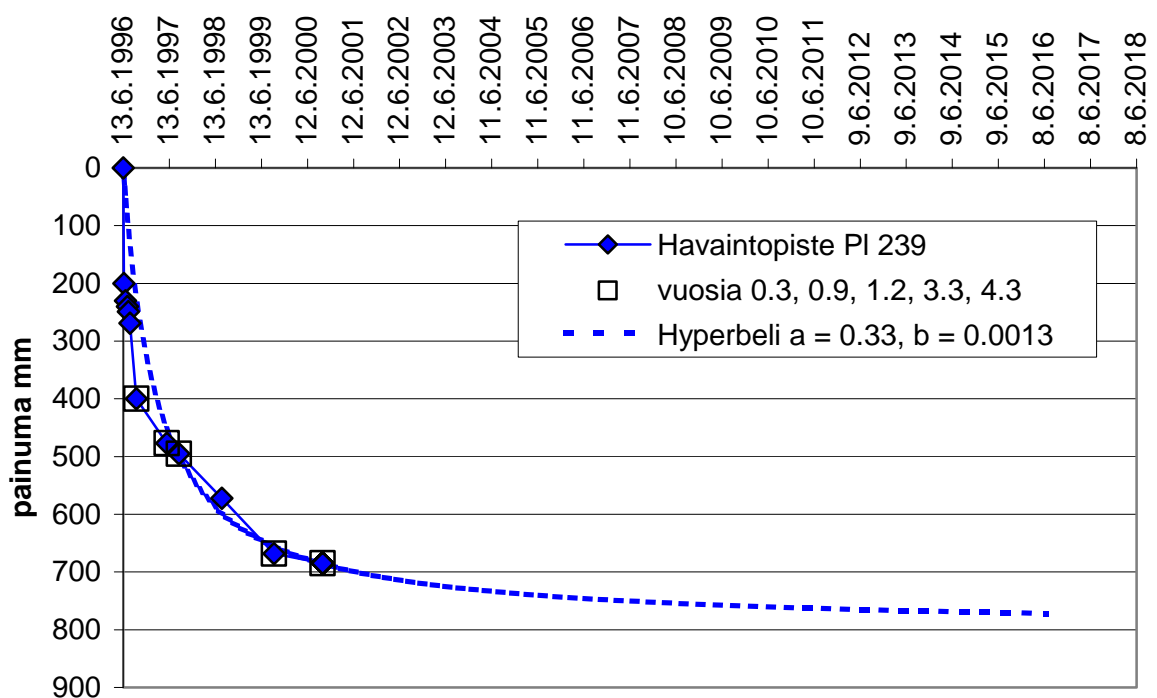
input

output

	a	b	Painuma	pain20	virh. mm
Hyperbeli	0.33	1.25E-03	799	772	ei havaint.



Aika-Painuma kuvaaja



Painumaennuste

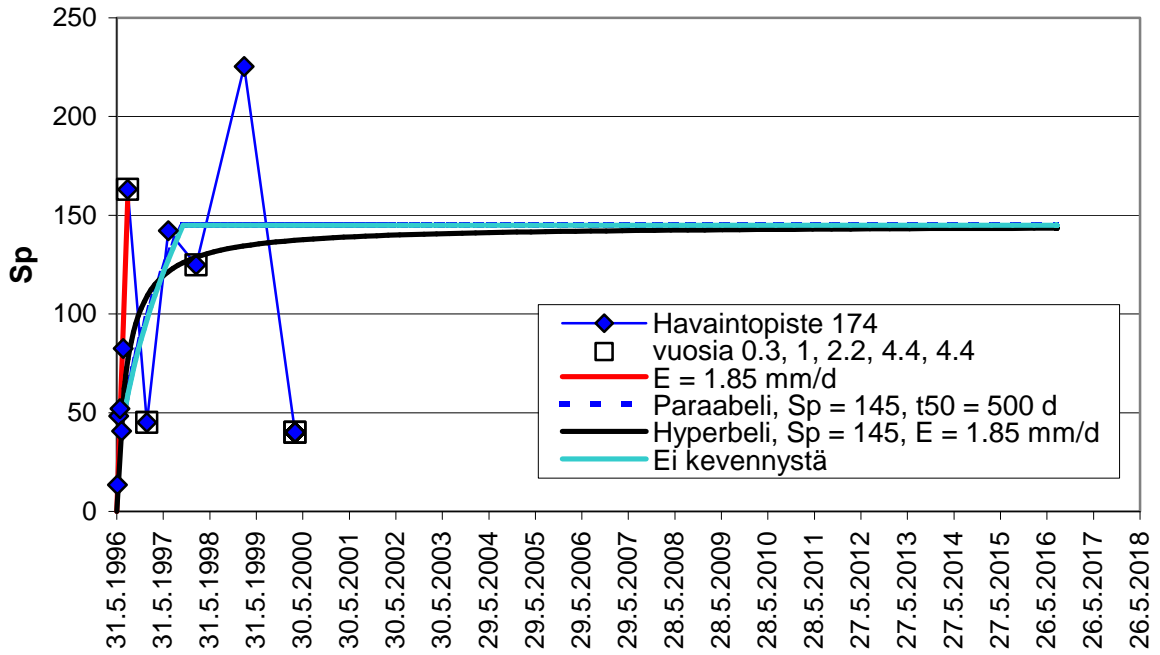
Painumapotentialiaali

LIITE VIII / s. 10

Leteensuo, 4 v

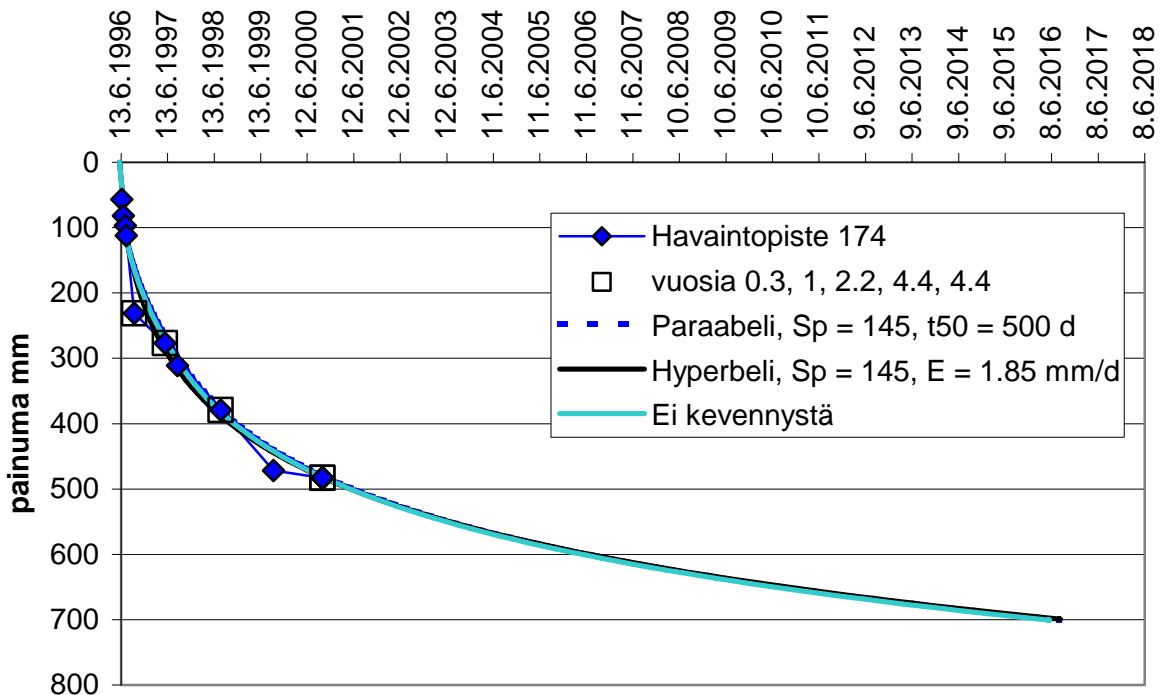
Havaintopiste 174

1-puol. kl.	H	w	m (b = 0)	m	alkupai.	t0 (d)	pain. t (a)	tod. t
2-puol. kl.	6	500	1.1...1.8	5	120	59	20	20
input				80				
	Sp	t50/E	rs	B	c _v	pain. 20	virh. mm	
Paraabeli	145	500	41	0.121	2.4	699	ei havaint.	
Hyperbeli	145	1.85	41	0.121		698	ei havaint.	



Aika-Painumapotentialiaali kuvaaja

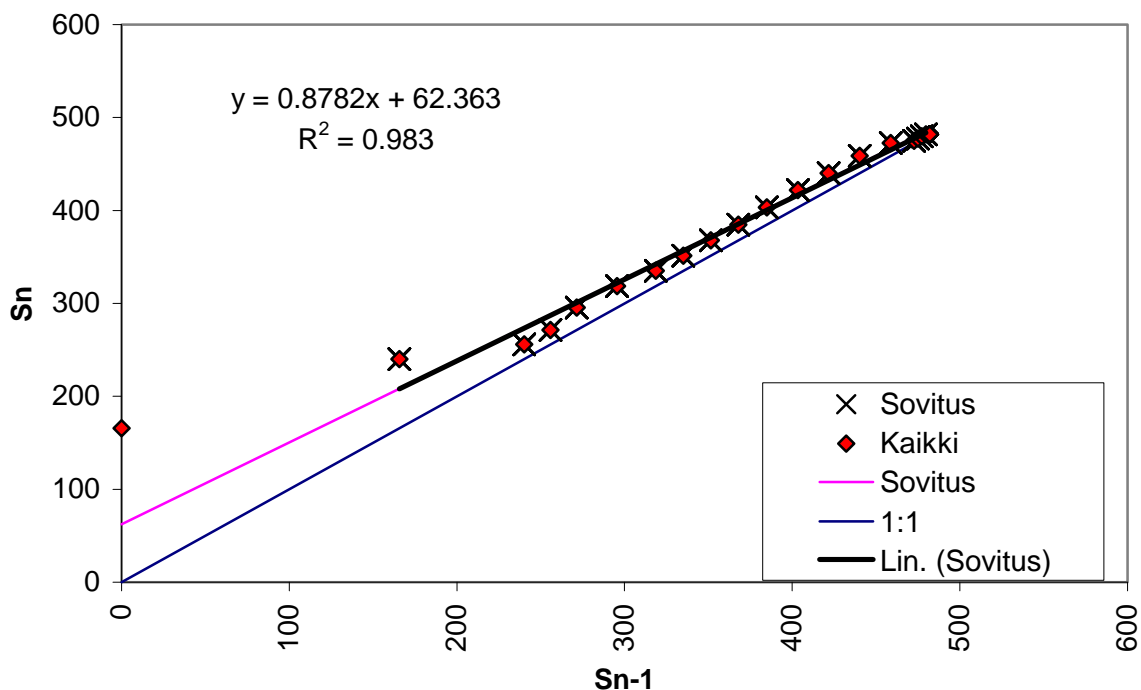
Aika-Painuma kuvaaja



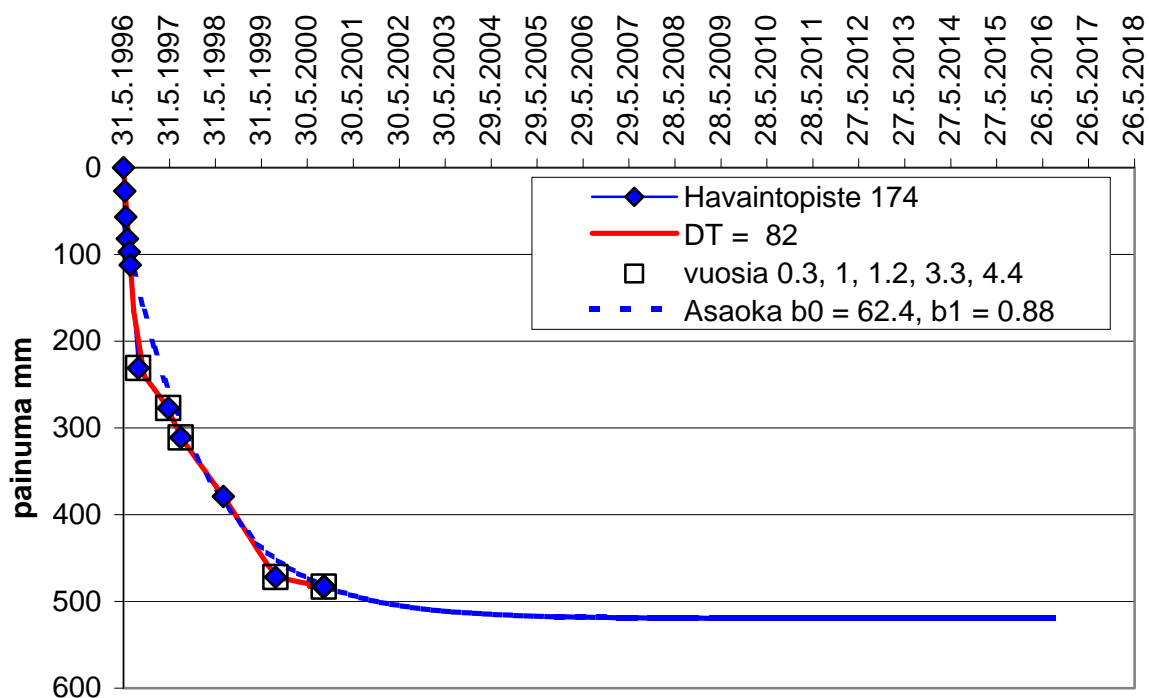


pain. t (a)	tod. t
20	20

input				output			
	β_0	β_1	t	Prim. Pain.		pain20	virh. mm
Asaoka	62.4	0.880	82.00	520		520	ei havaint.
	62.4	0.880	82.00				



Aika-Painuma kuvaaja





pain. t (a)

tod. t

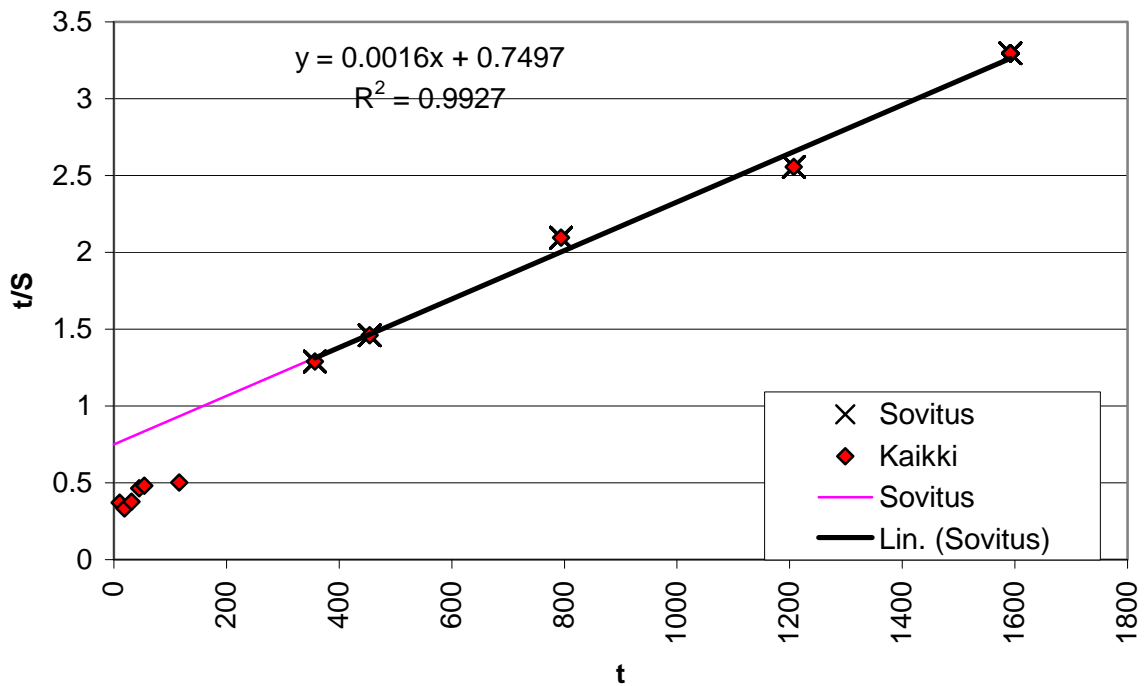
20

20

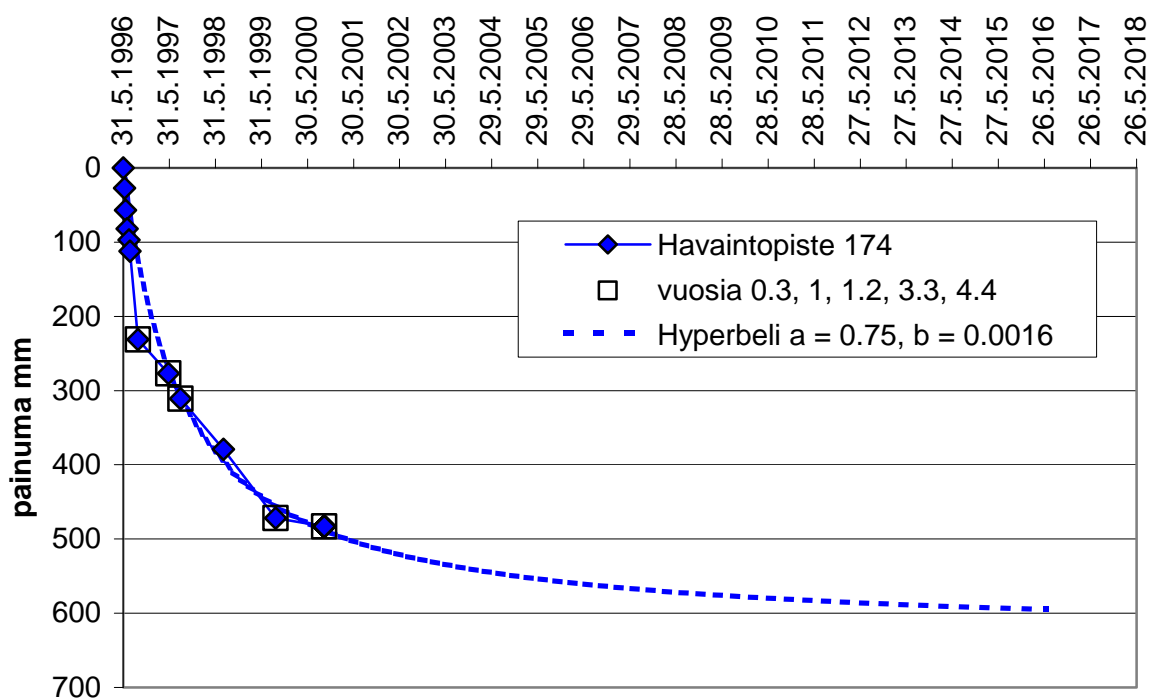
input

output

	a	b	Painuma	pain20	virh. mm
Hyperbeli	0.75	1.58E-03	634	595	ei havaint.



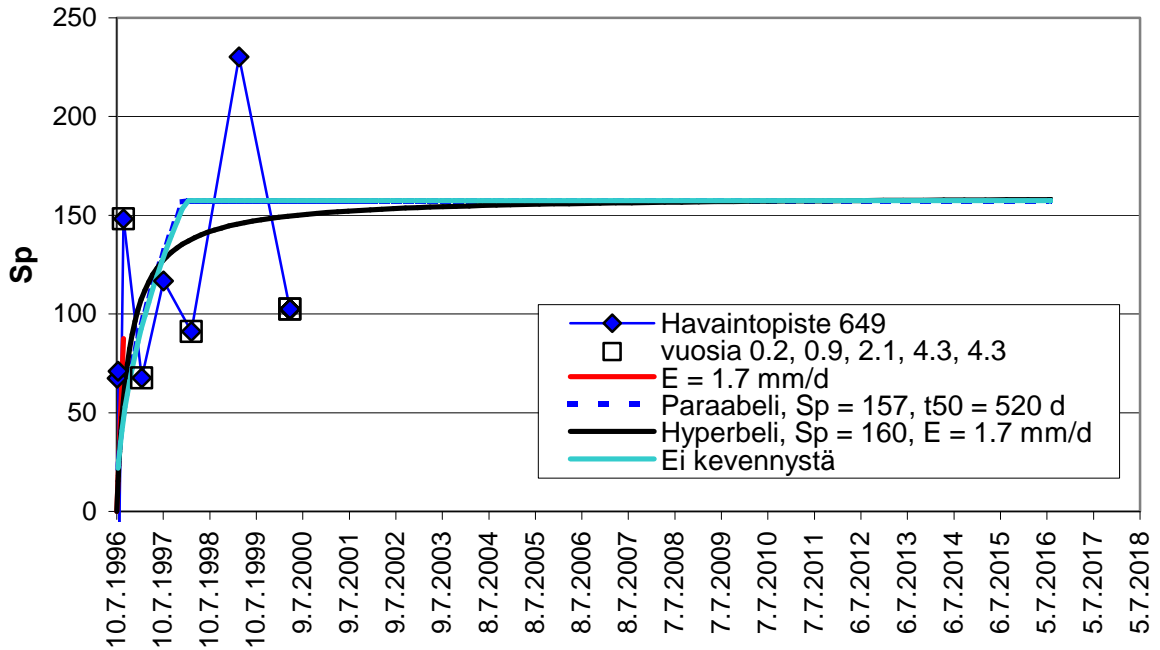
Aika-Painuma kuvaaja



Leteensuo, 4 v

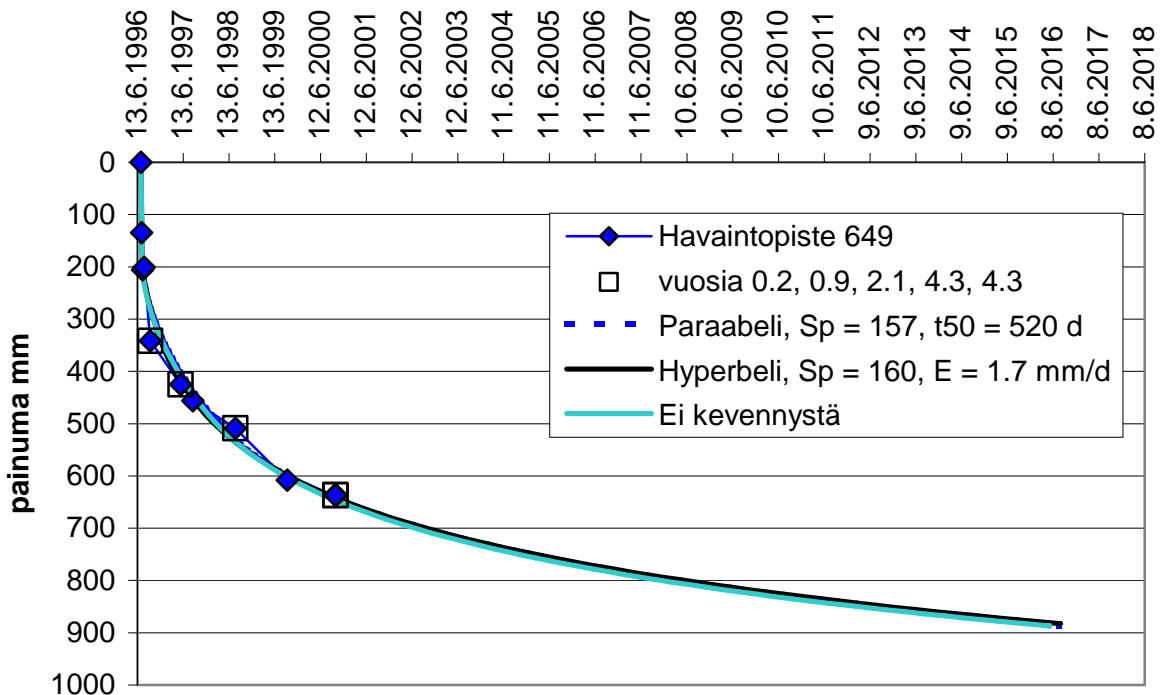
Havaintopiste 649

● 1-puol. kl	H	w	m (b = 0)	m	alkupai.	t0 (d)	pain. t (a)	tod. t
○ 2-puol. kl	6	500	1.1...1.8	5	200	10	20	20
input				80				
	Sp	t50/E	rs	B	c _v	pain. 20	virh. mm	
Paraabeli	157	520	38	0.131	2.3	887	ei havaint.	
Hyperbeli	160	1.70	38	0.133		882	ei havaint.	



Aika-Painumapotentialiaali kuvaaja

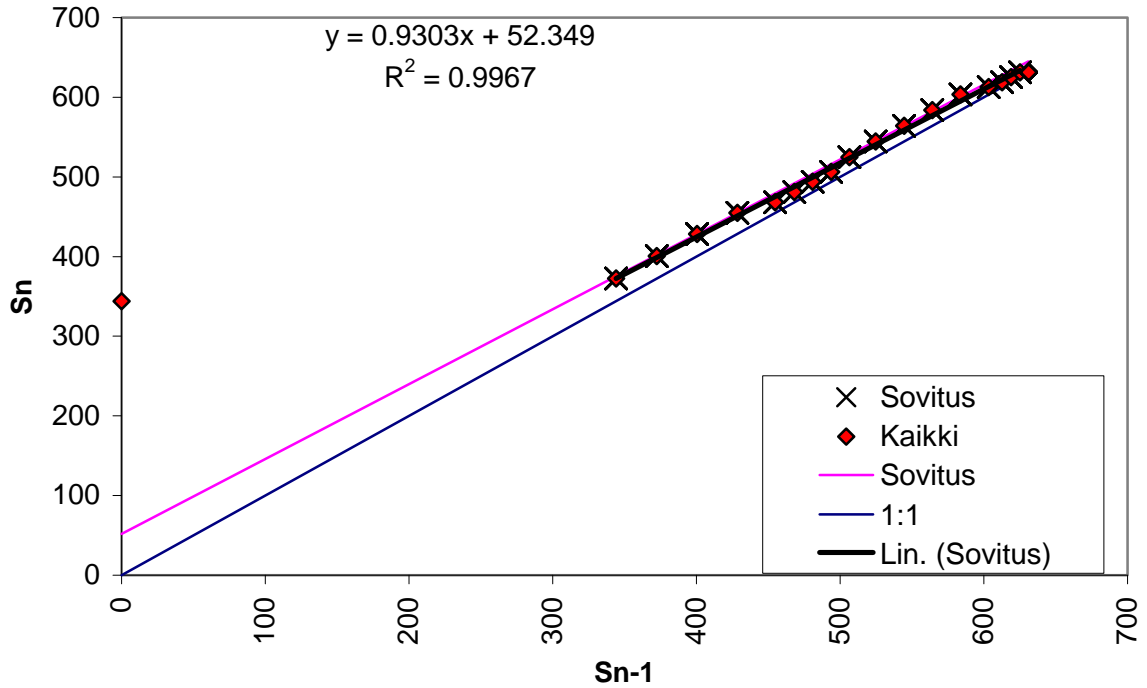
Aika-Painuma kuvaaja



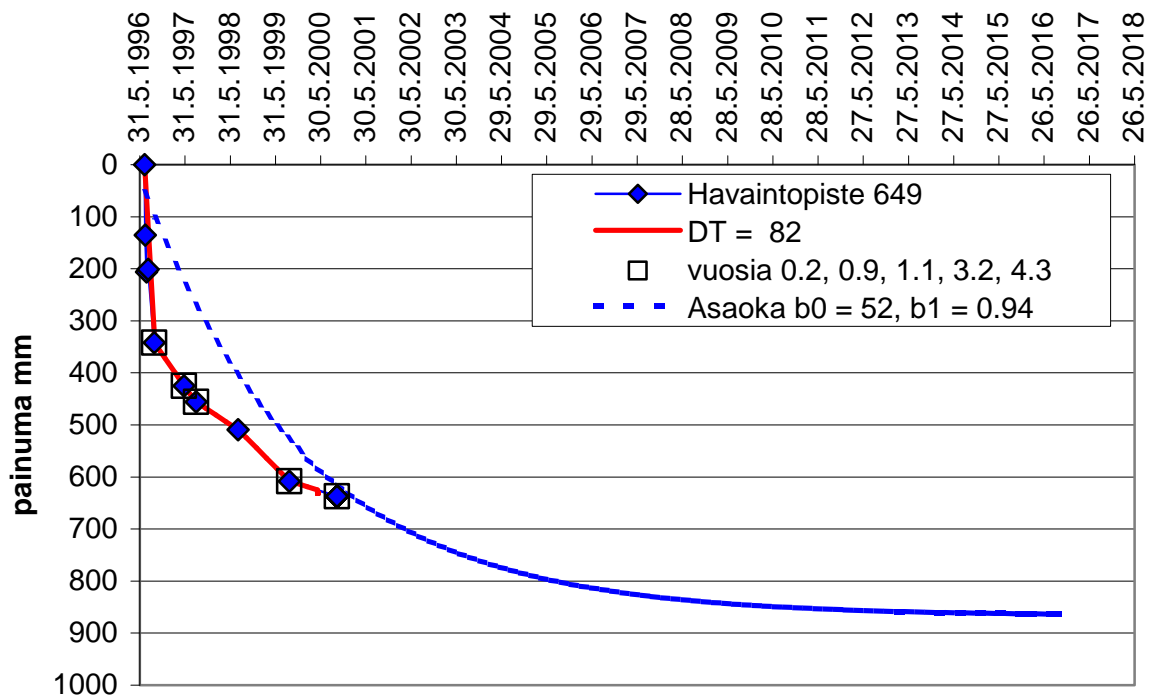


pain. t (a)	tod. t
20	20

input				output			
	β_0	β_1	t	Prim. Pain.		pain20	virh. mm
Asaoka	52.0	0.940	82.00	867		863	ei havaint.
	52.0	0.940	82.00				



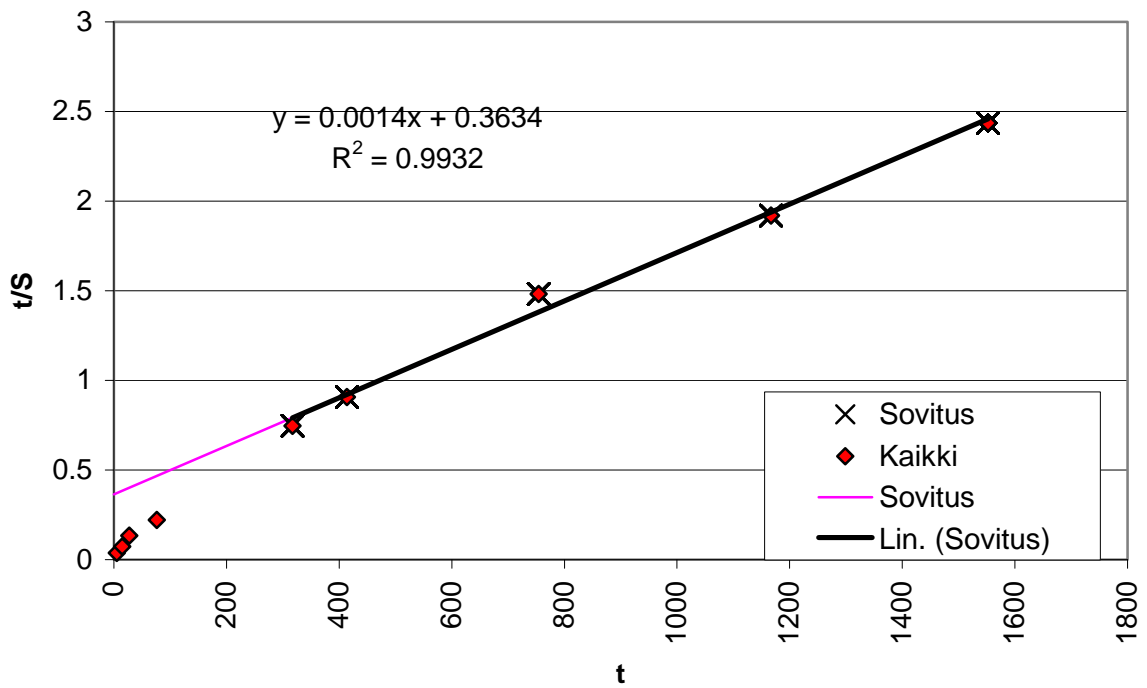
Aika-Painuma kuvaaja



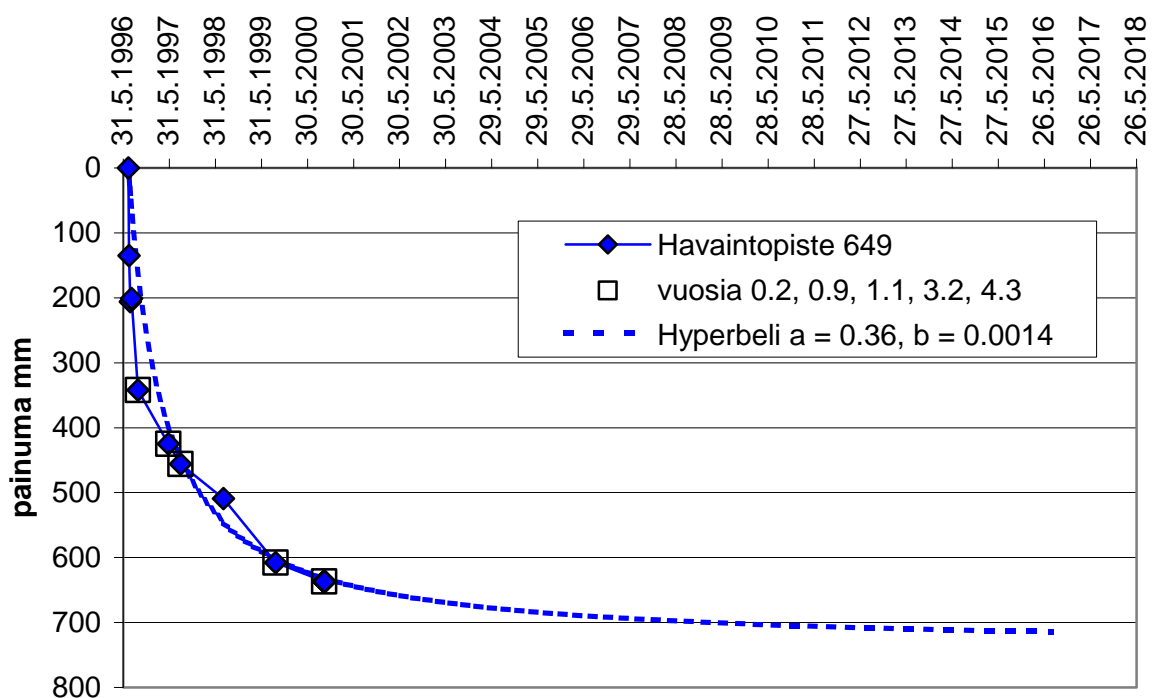


pain. t (a)	tod. t
20	20

input			output			
	a	b	Painuma		pain20	virh. mm
Hyperbeli	0.36	1.35E-03	741		714	ei havaint.



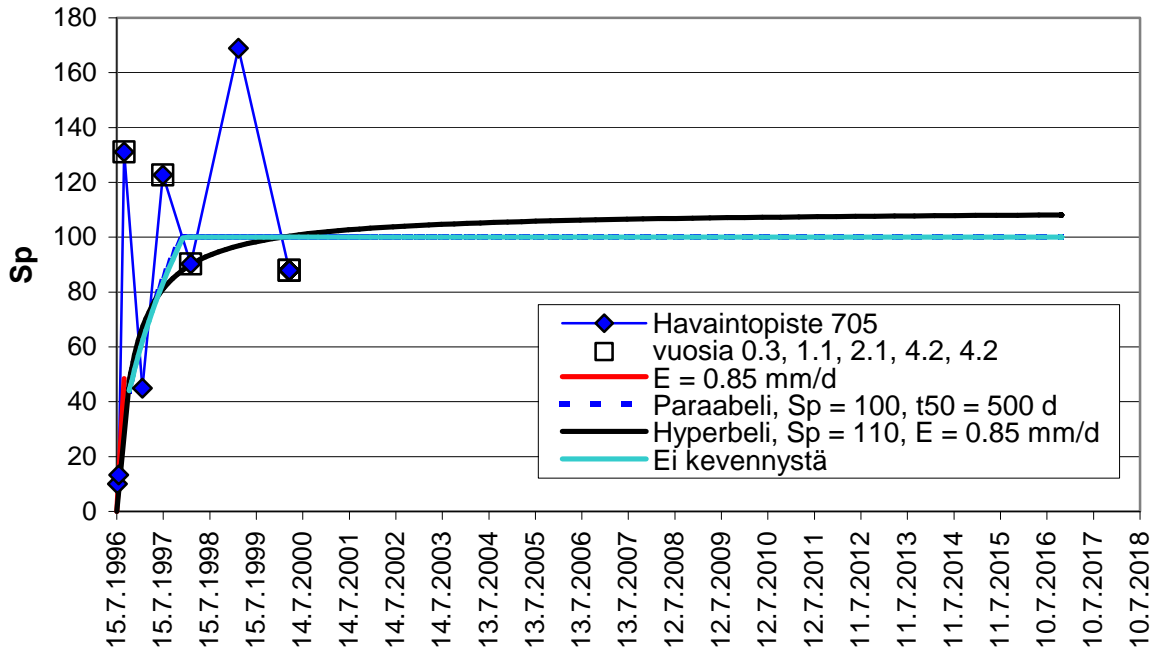
Aika-Painuma kuvaaja



Leteensuo, 4 v

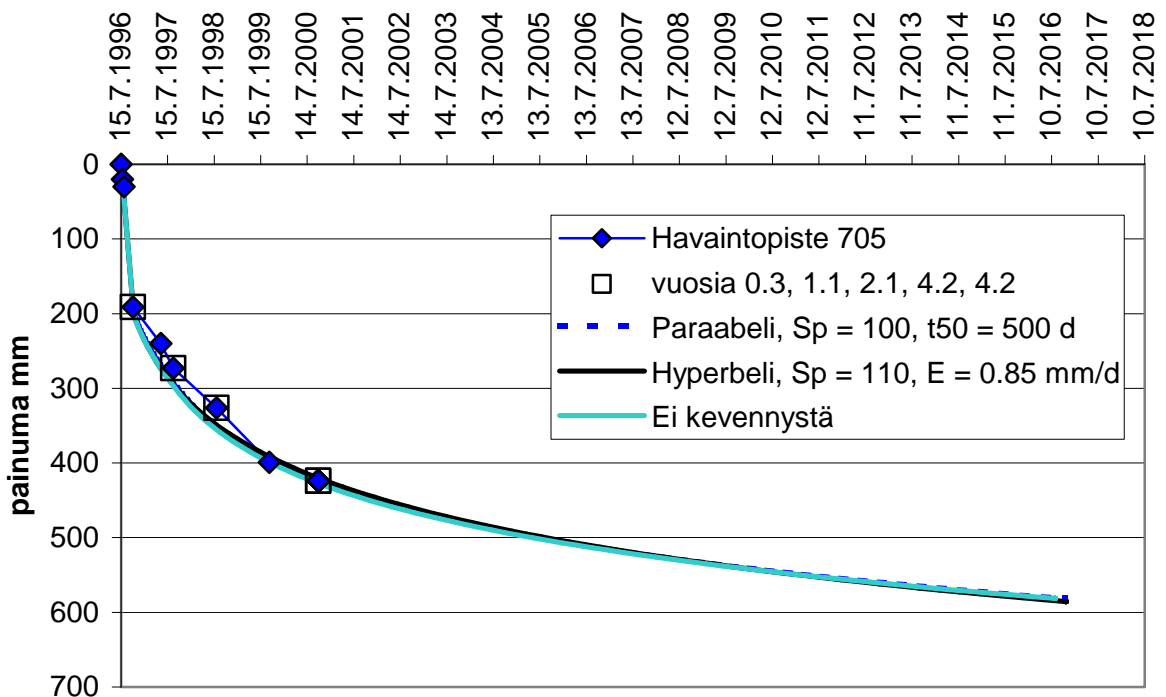
Havaintopiste 705

● 1-puol. kl	H	w	m (b = 0)	m	alkupai.	t0 (d)	pain. t (a)	tod. t
○ 2-puol. kl	4	500	1.1...1.8	5	200	97	20	20
input				80				
	Sp	t50/E	rs	B	c _v	pain. 20	virh. mm	
Paraabeli	100	500	40	0.125	1.1	580	ei havaint.	
Hyperbeli	110	0.85	36	0.138		584	ei havaint.	



Aika-Painumapotentialiaali kuvaaja

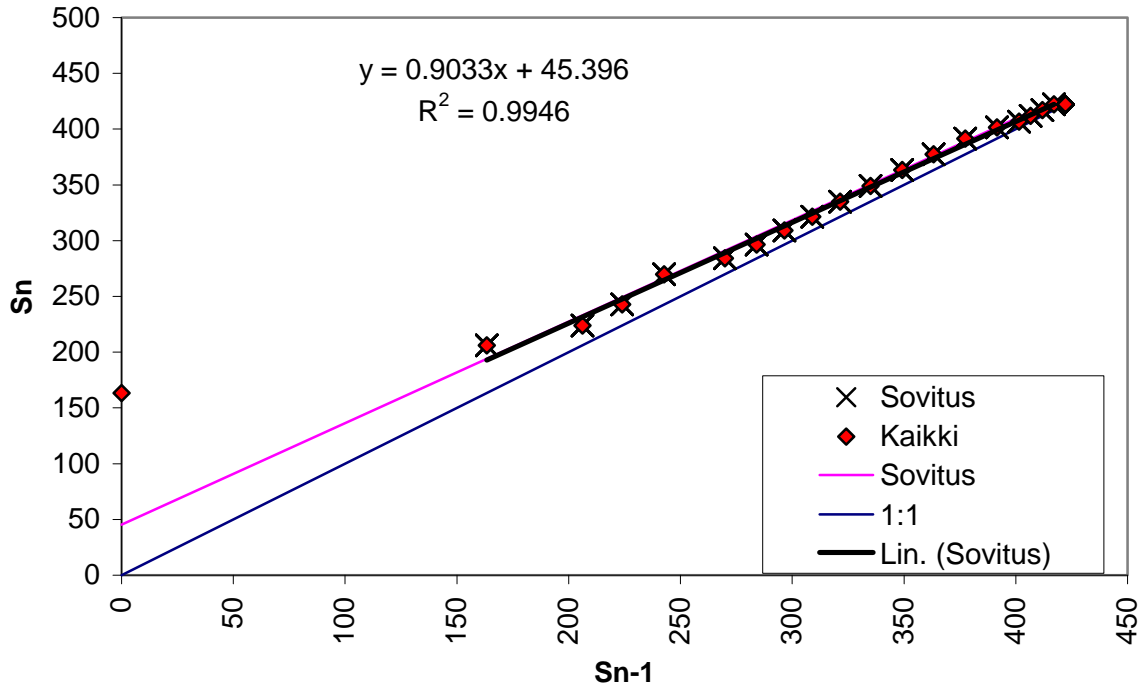
Aika-Painuma kuvaaja



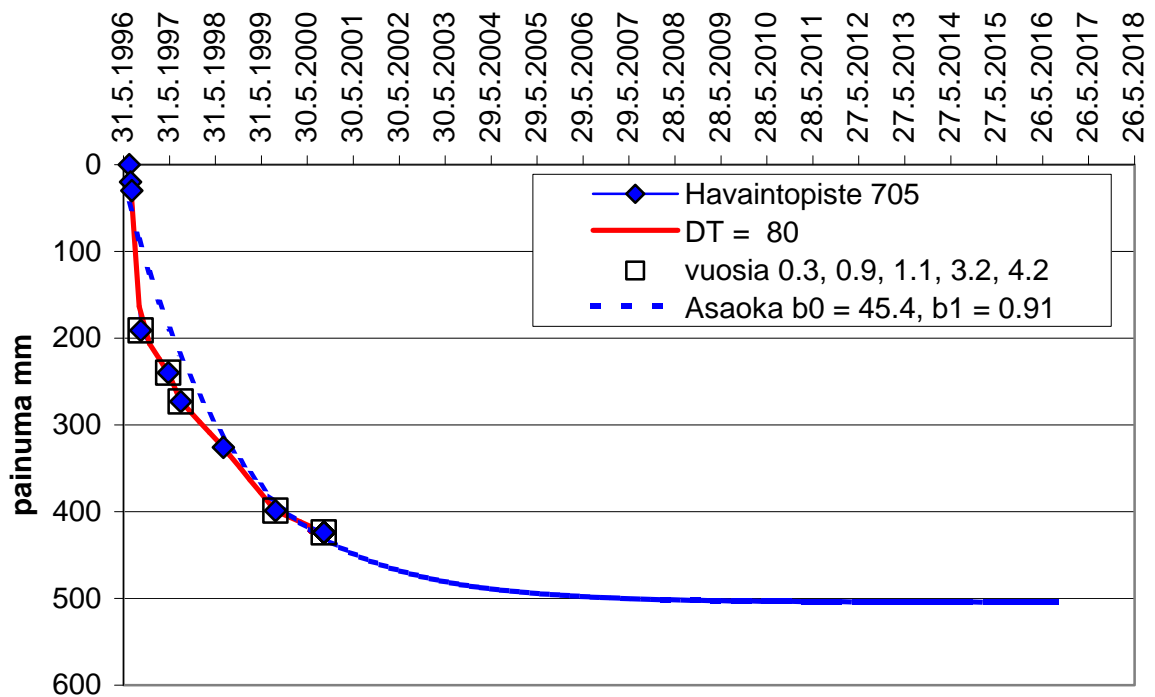


pain. t (a)	tod. t
20	19.9

input				output			
	β_0	β_1	t	Prim. Pain.	pain19.9	virh. mm	
Asaoka	45.4	0.910	80.00	504	504	ei havaint.	
	45.4	0.910	80.00				



Aika-Painuma kuvaaja





pain. t (a)

tod. t

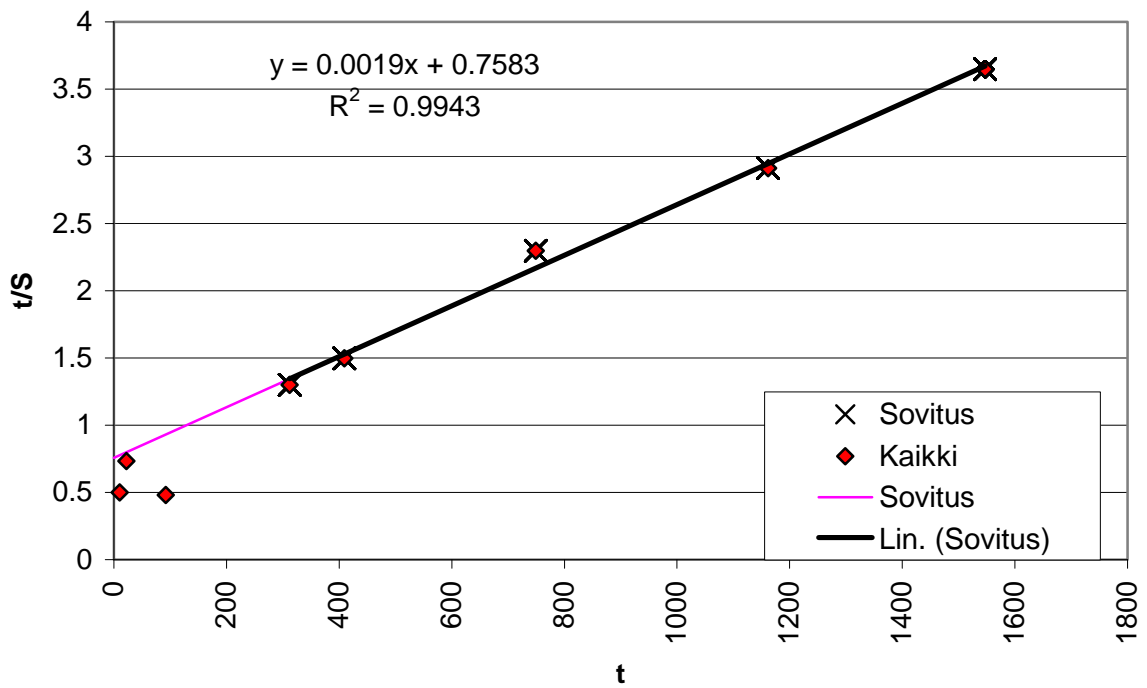
20

20

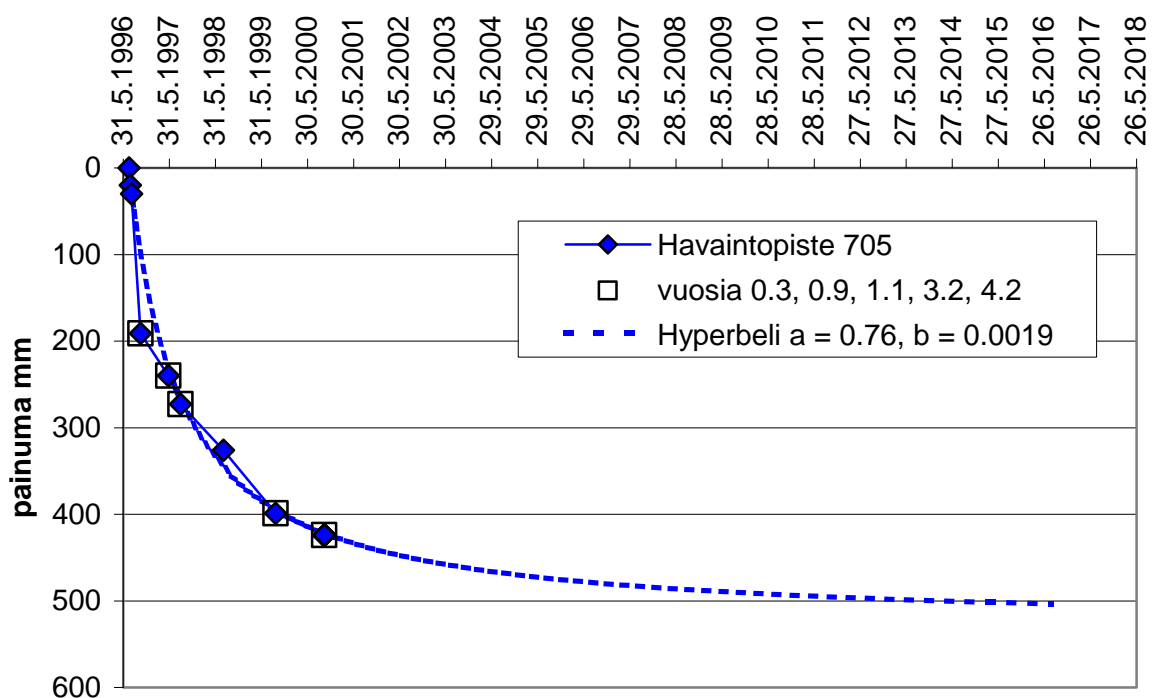
input

output

	a	b	Painuma		pain20	virh. mm
Hyperbeli	0.76	1.88E-03	531		503	ei havaint.



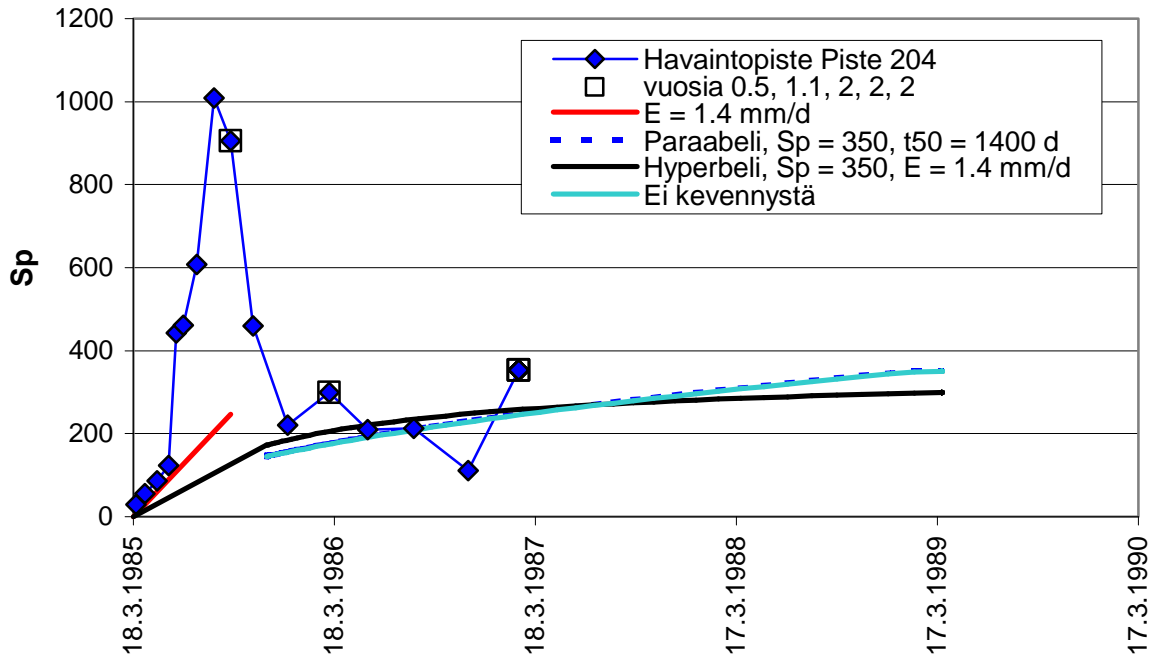
Aika-Painuma kuvaaja



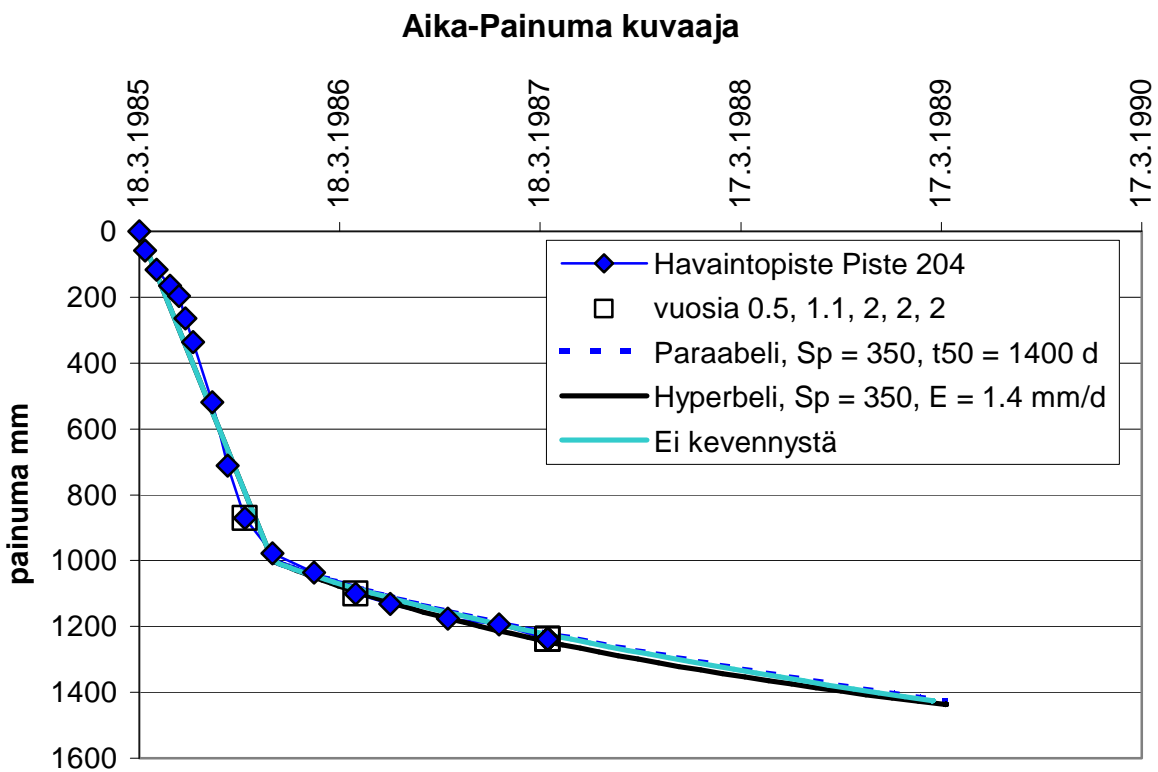
Vanhankaupungin lahti 2908, 2 v

Havaintopiste Piste 204

○ 1-puol. ku	H	w	m (b = 0)	m	alkupai.	t0 (d)	pain. t (a)	tod. t
● 2-puol. ku	20	90	6...10.1	5	1000	242	14.7	14.7
input					80			
	Sp	t50/E	rs	B	c _v	pain. 14.7	virh. mm	
Paraabeli	350	1400	57	0.088	5.1	1879	ei havaint.	
Hyperbeli	350	1.40	57	0.088		1852	ei havaint.	



Aika-Painumapotentiaali kuvaaja

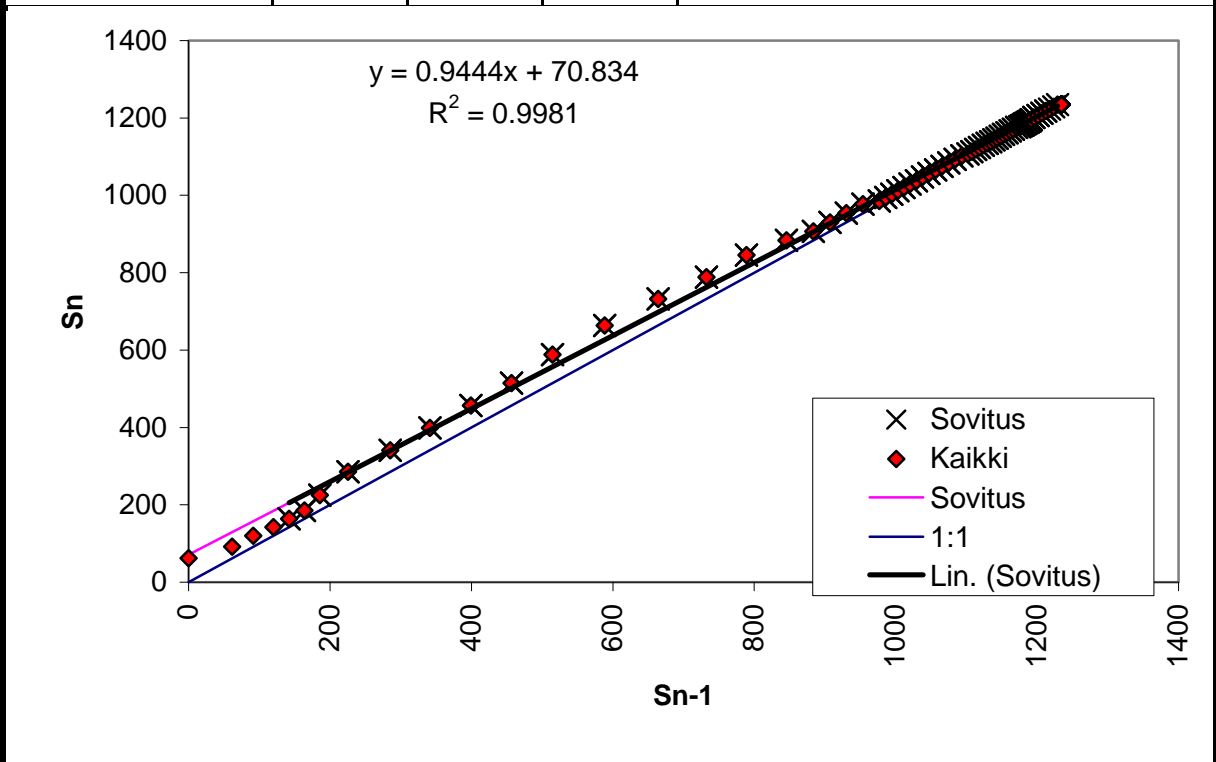


Aika-Painuma kuvaaja

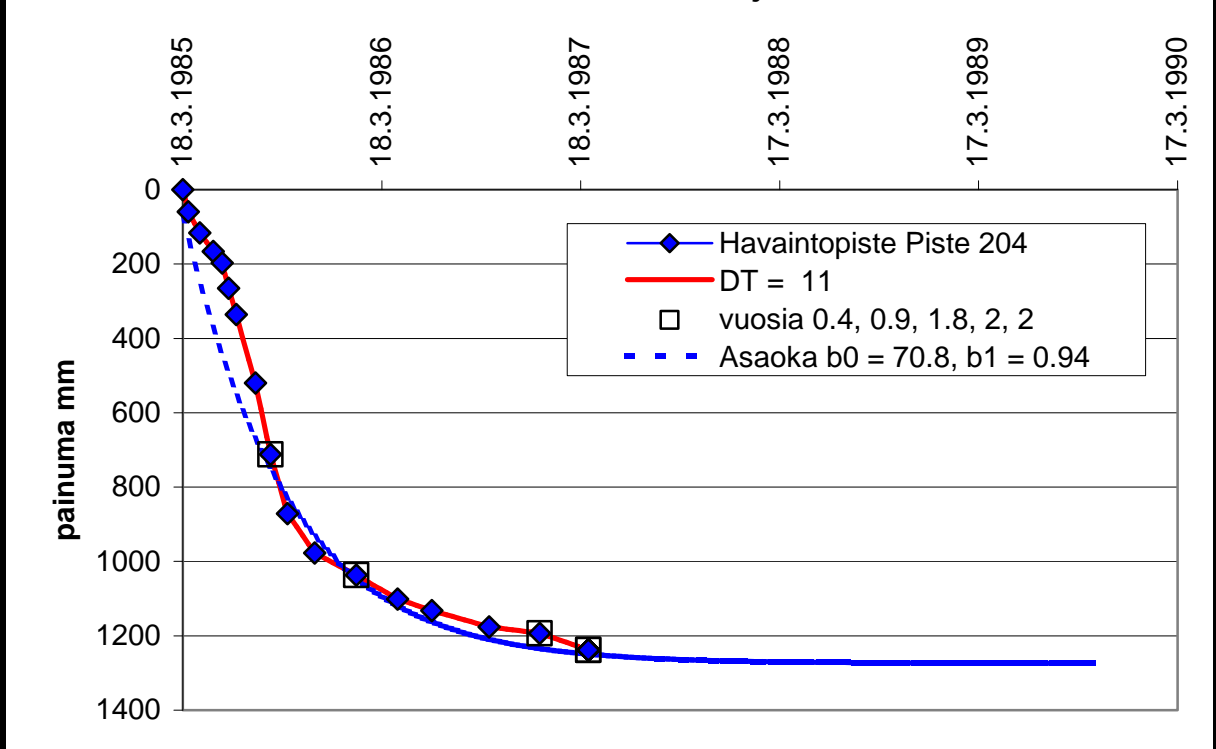


pain. t (a)	tod. t
14.7	14.7

input				output			
	β_0	β_1	t	Prim. Pain.		pain14.7	virh. mm
Asaoka	70.8	0.944	11.00	1274		1274	ei havaint.
	70.8	0.944	11.00				



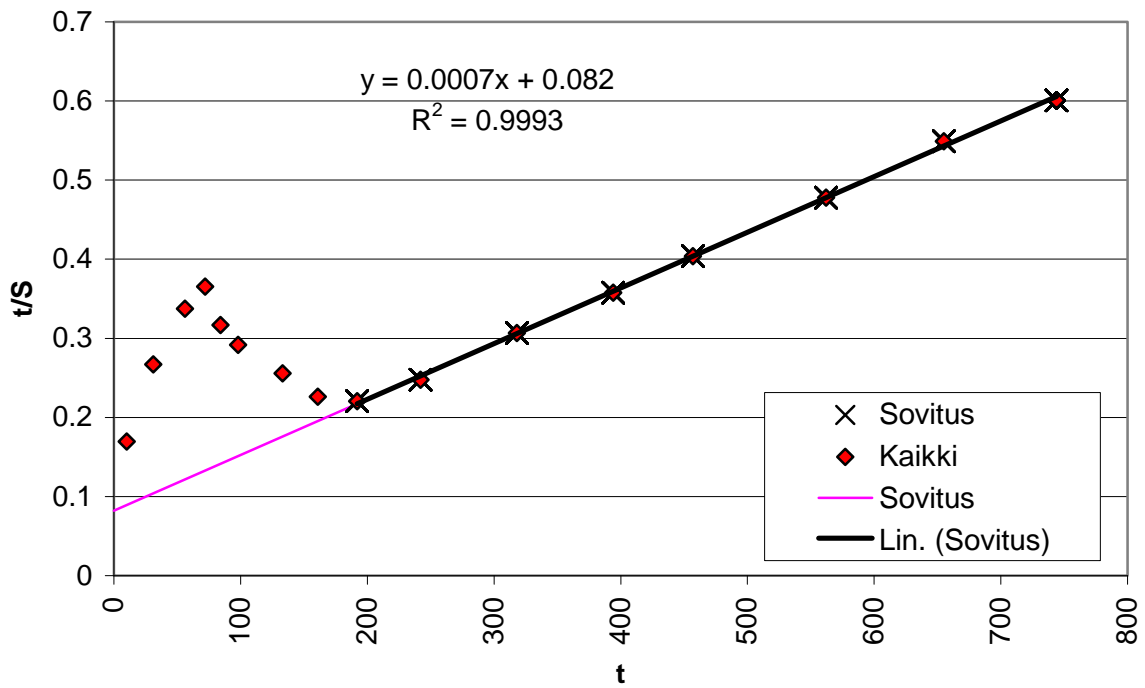
Aika-Painuma kuvaaja



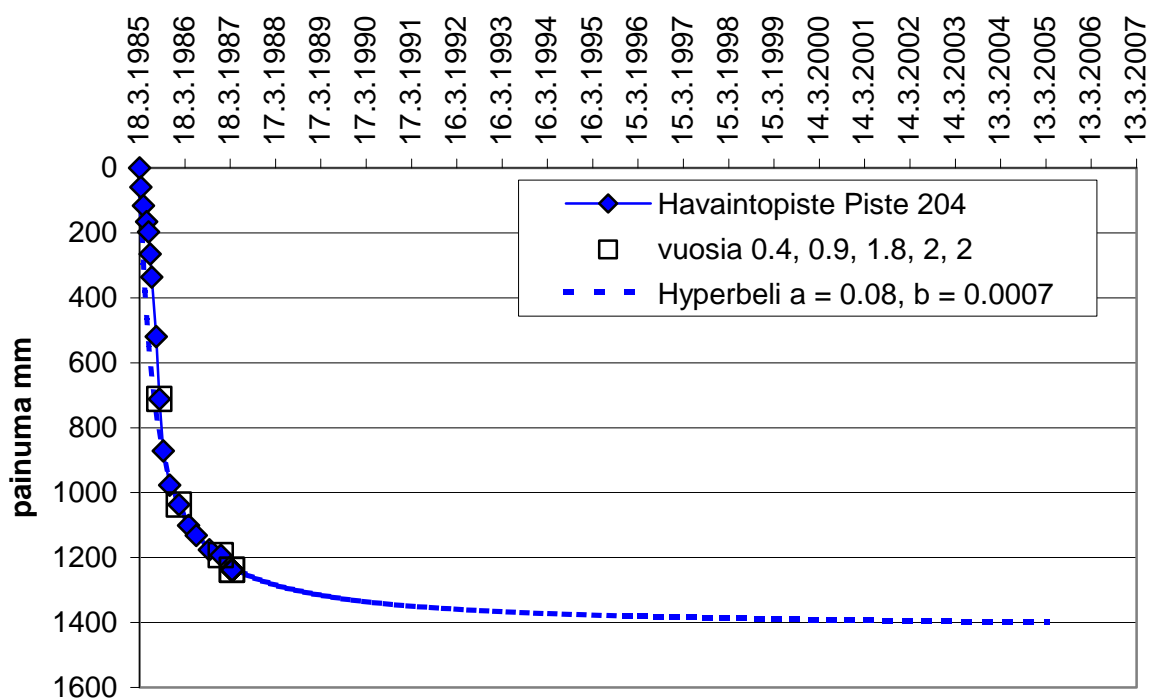


pain. t (a)	tod. t
14.7	14.7

input			output			
	a	b	Painuma		pain14.7	virh. mm
Hyperbeli	0.08	7.04E-04	1421		1391	ei havaint.



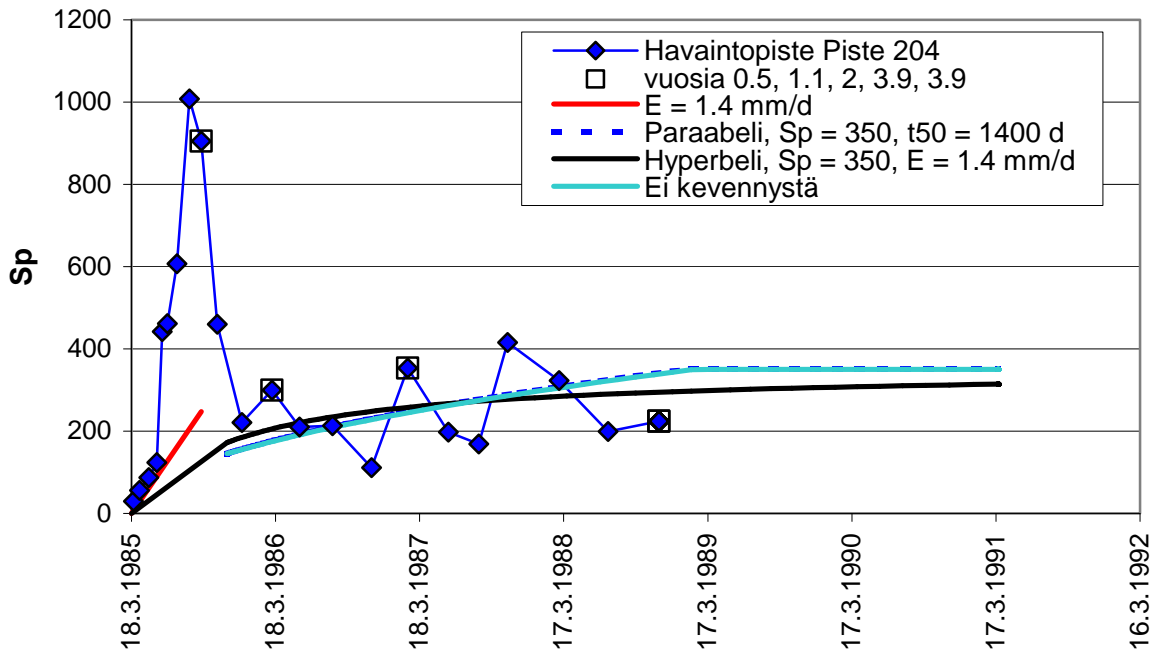
Aika-Painuma kuvaaja



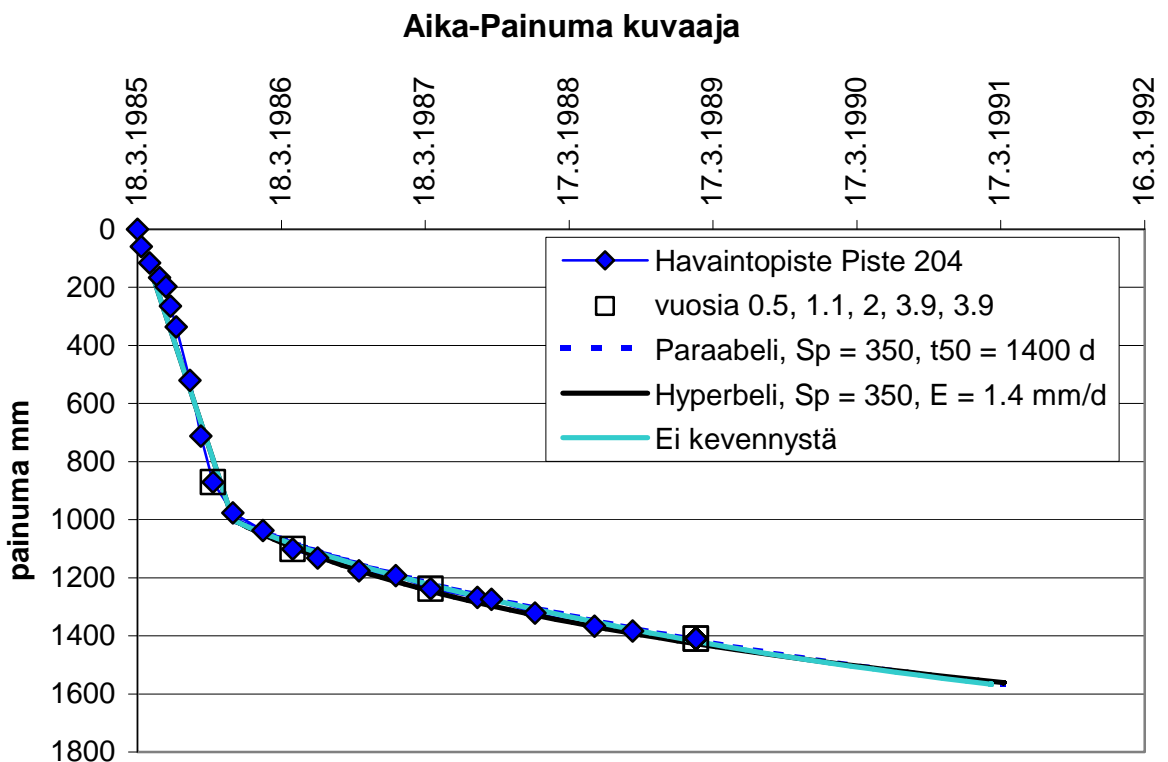
Vanhankaupungin lahti 2908, 4 v

Havaintopiste Piste 204

○ 1-puol. kl	H	w	m (b = 0)	m	alkupai.	t0 (d)	pain. t (a)	tod. t
● 2-puol. kl	20	90	6...10.1	5	1000	242	14.7	14.7
input				80				
	Sp	t50/E	rs	B	c _v	pain. 14.7	virh. mm	
Paraabeli	350	1400	57	0.088	5.1	1879	ei havaint.	
Hyperbeli	350	1.40	57	0.088		1852	ei havaint.	



Aika-Painumapotentiaali kuvaaja

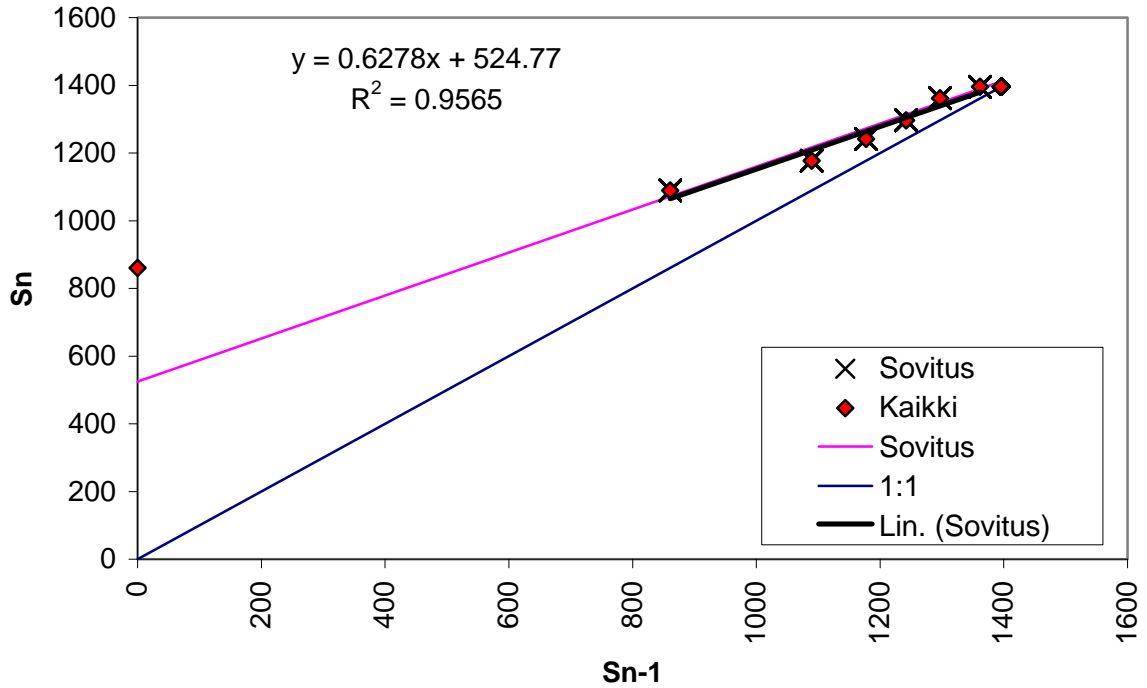


Aika-Painuma kuvaaja

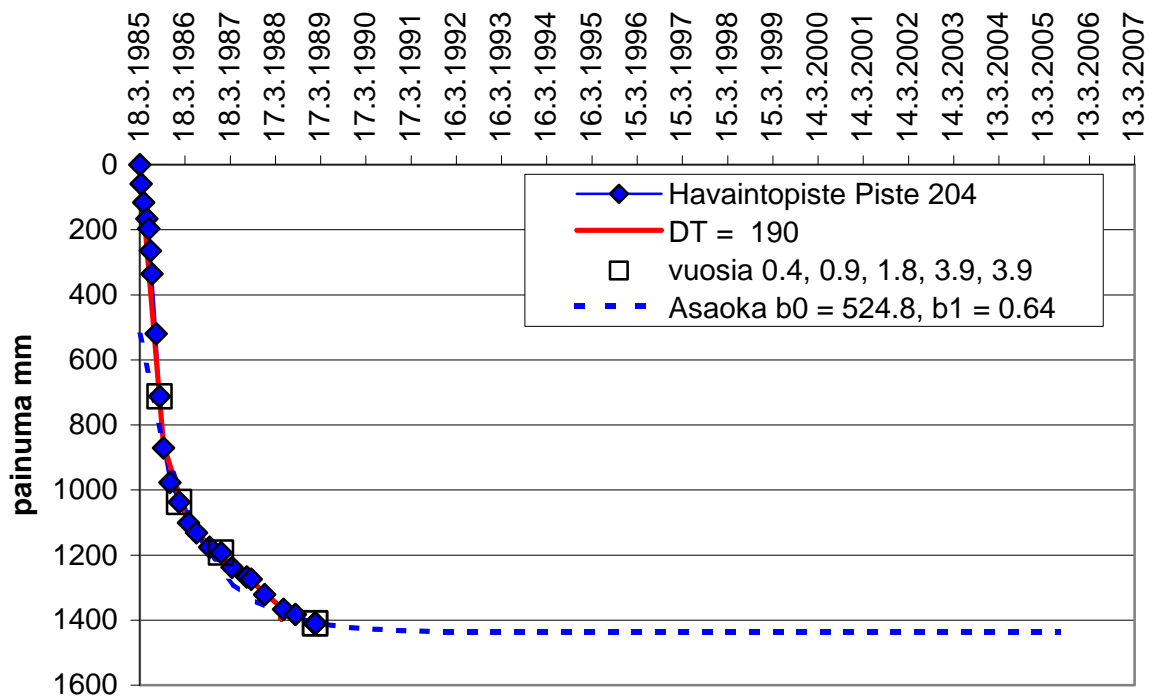


pain. t (a)	tod. t
14.7	14.6

input				output			
	β_0	β_1	t	Prim. Pain.		pain14.6	virh. mm
Asaoka	524.8	0.635	190.00	1438		1438	ei havaint.
	524.8	0.635	190.00				



Aika-Painuma kuvaaja





pain. t (a)

tod. t

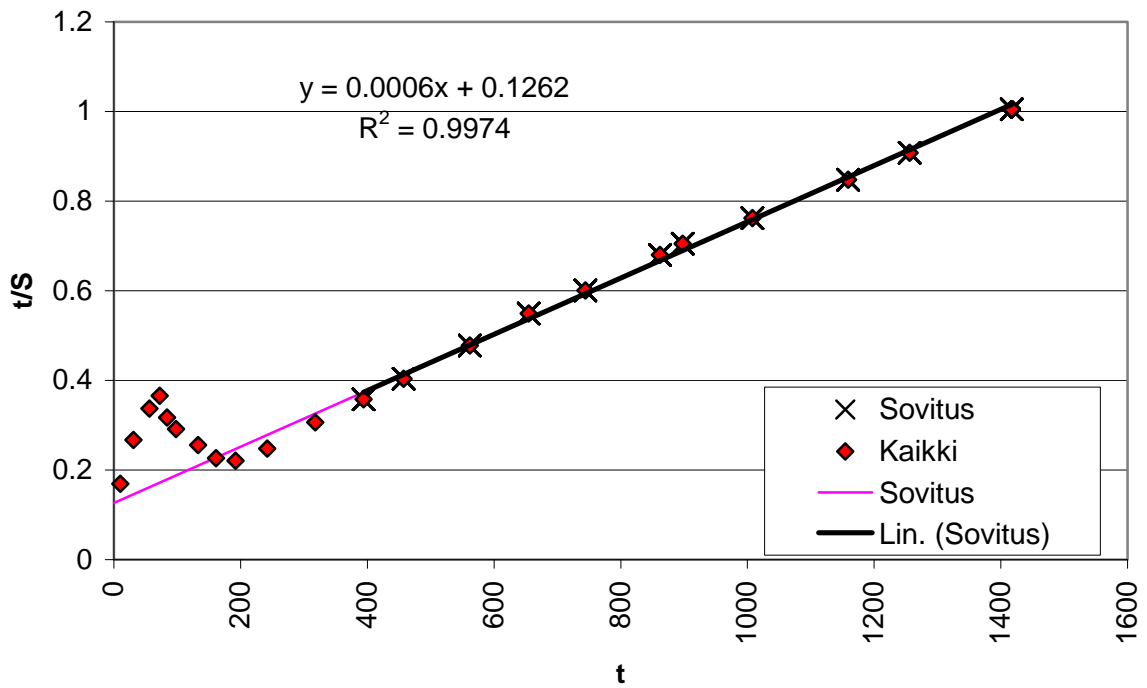
14.7

14.7

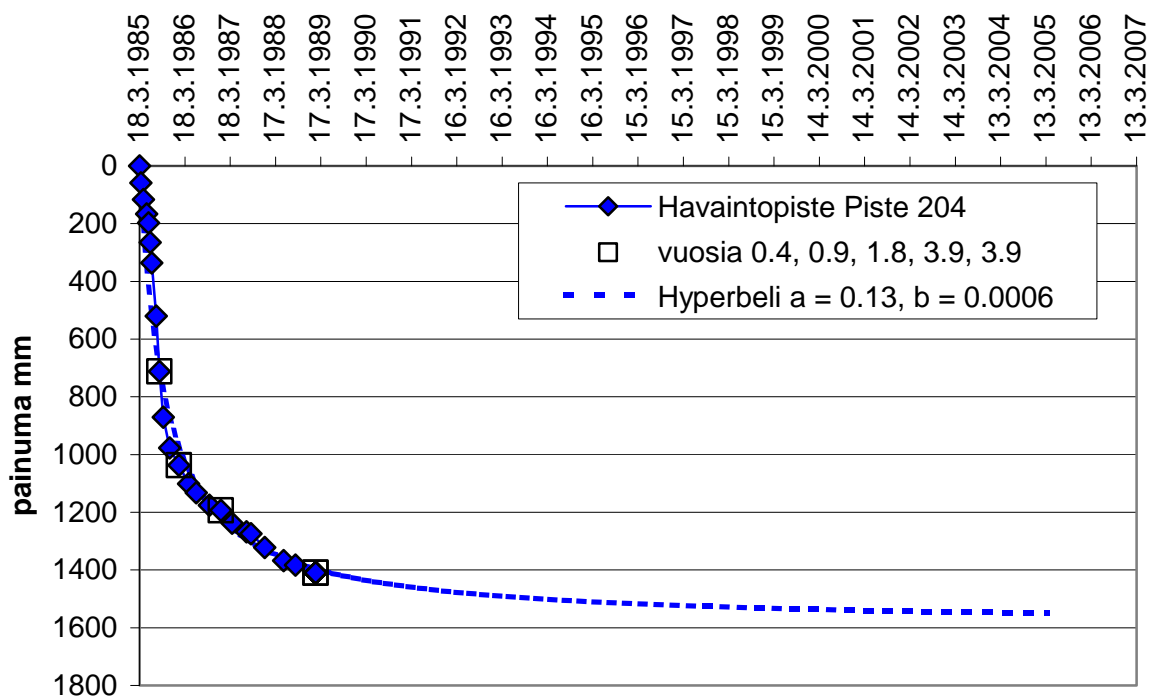
input

output

	a	b	Painuma		pain14.7	virh. mm
Hyperbeli	0.13	6.28E-04	1593		1536	ei havaint.



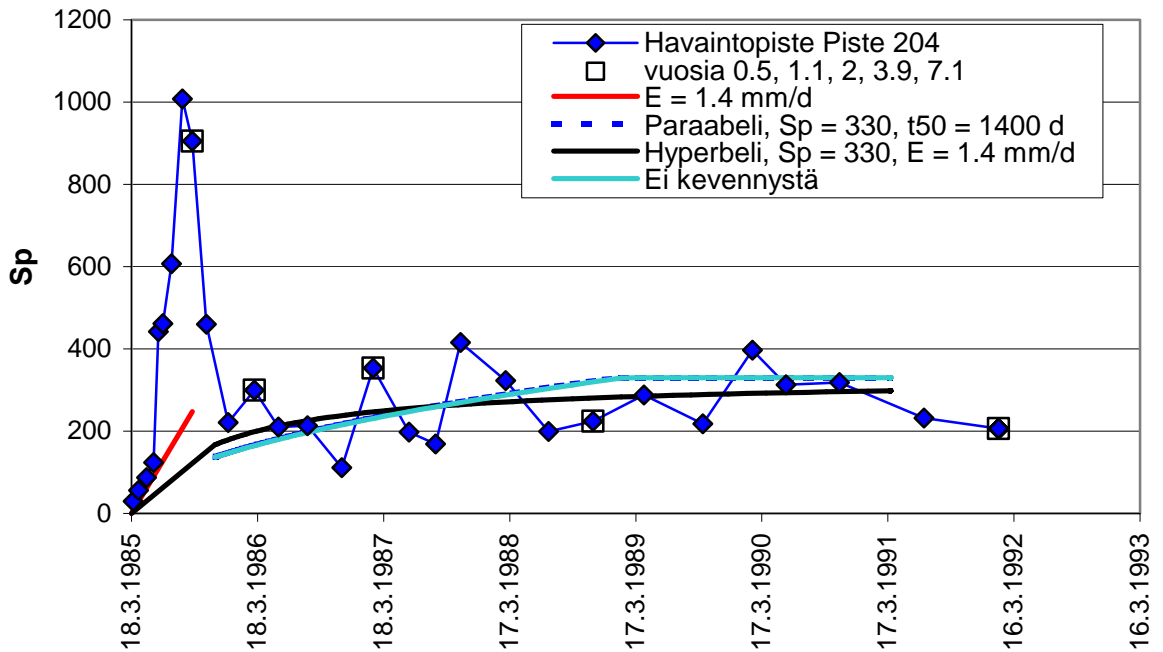
Aika-Painuma kuvaaja



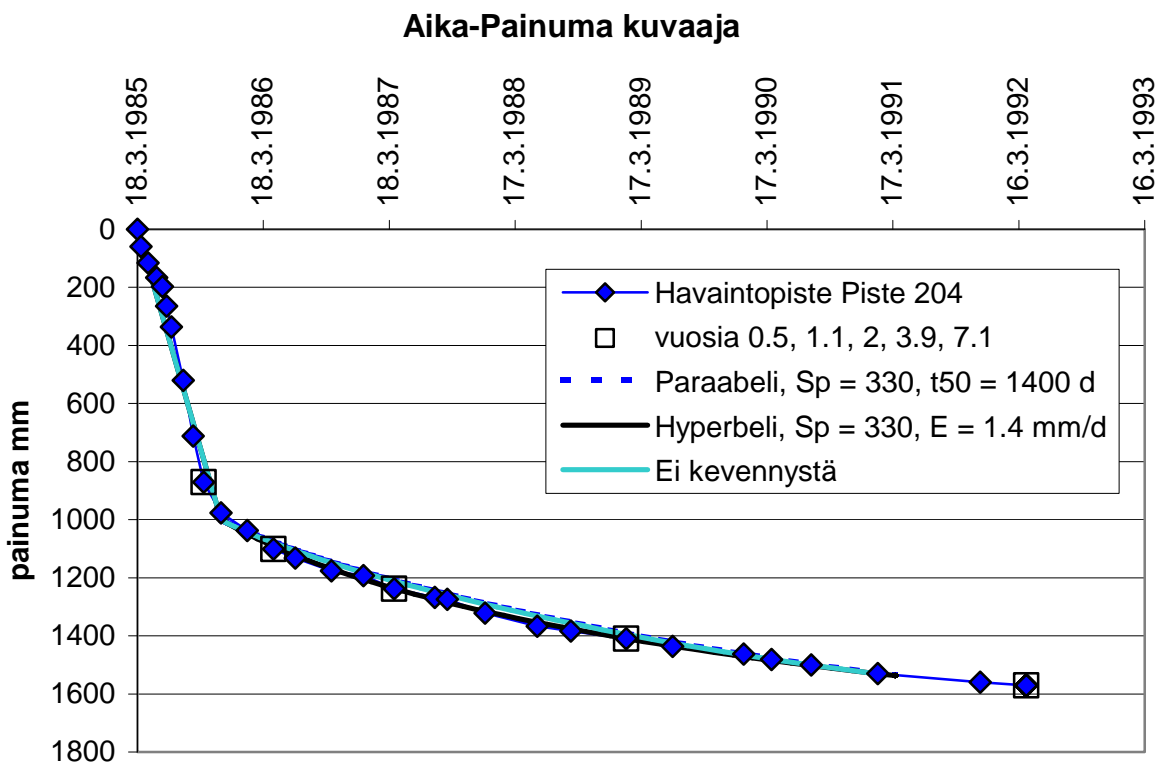
Vanhankaupungin lahti 2908, 7 v

Havaintopiste Piste 204

○ 1-puol. kl	H	w	m (b = 0)	m	alkupai.	t0 (d)	pain. t (a)	tod. t
● 2-puol. kl	20	90	6...10.1	5	1000	242	14.7	14.7
input				80				
	Sp	t50/E	rs	B	c _v	pain. 14.7	virh. mm	
Paraabeli	330	1400	61	0.083	5.1	1829	ei havaint.	
Hyperbeli	330	1.40	61	0.083		1812	ei havaint.	



Aika-Painumapotentiaali kuvaaja

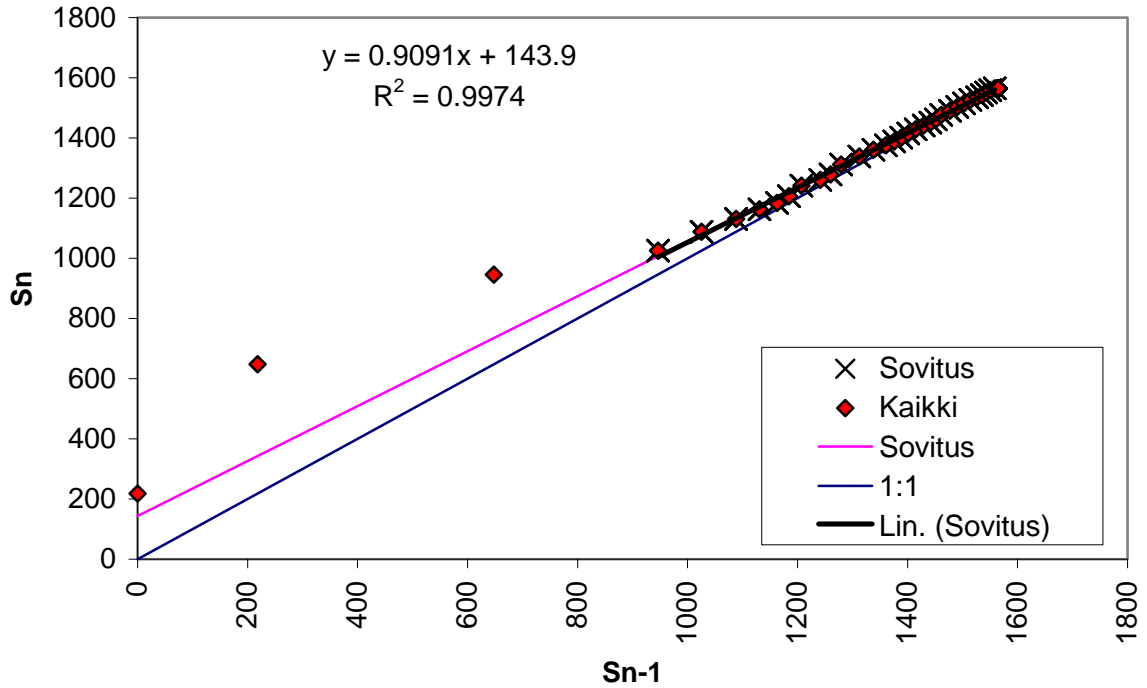


Aika-Painuma kuvaaja

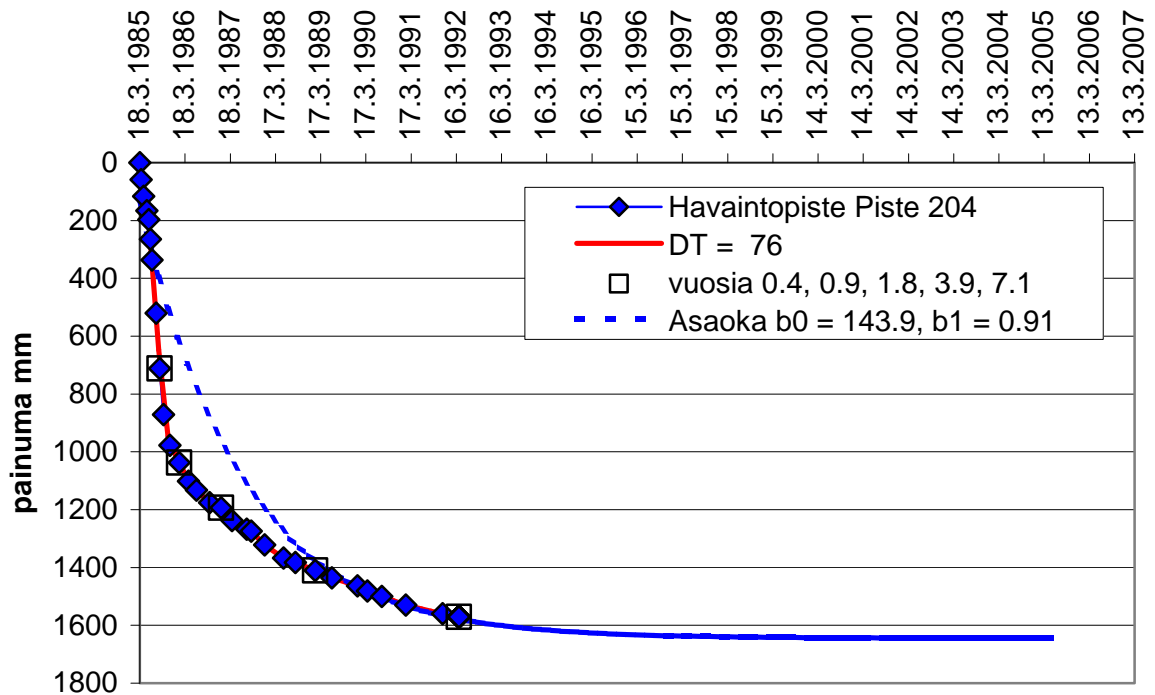


pain. t (a)	tod. t
14.7	14.7

input				output			
	β_0	β_1	t	Prim. Pain.		pain14.7	virh. mm
Asaoka	143.9	0.913	75.79	1645		1642	ei havaint.
	143.9	0.913	75.79				



Aika-Painuma kuvaaja





pain. t (a)

tod. t

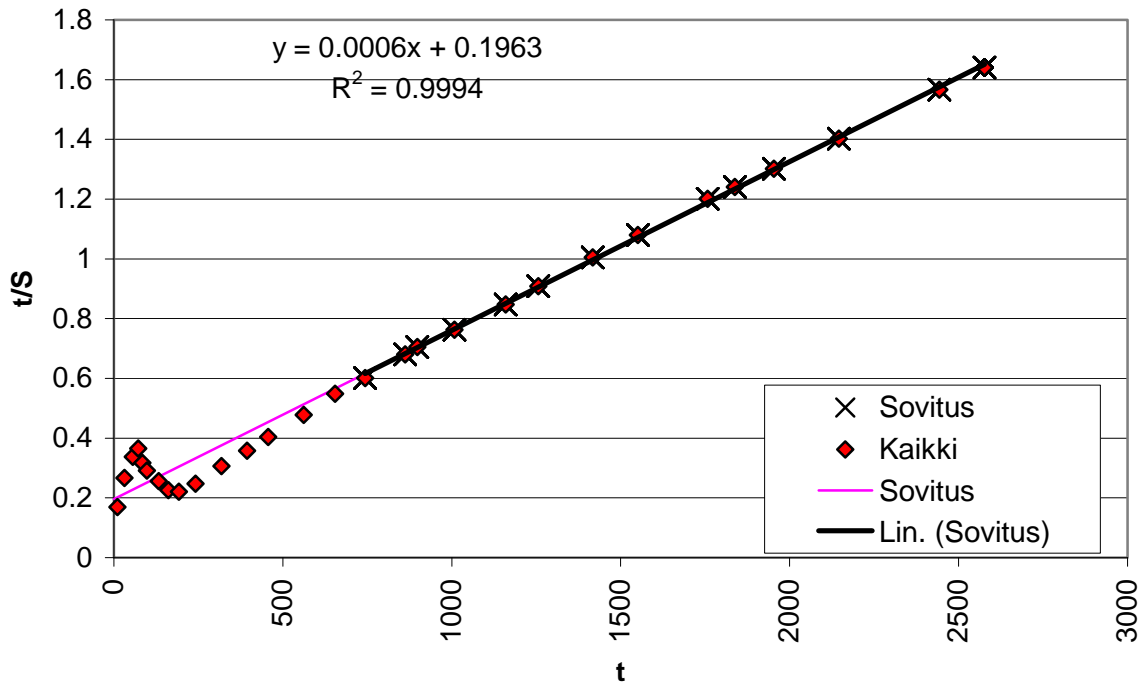
14.7

14.7

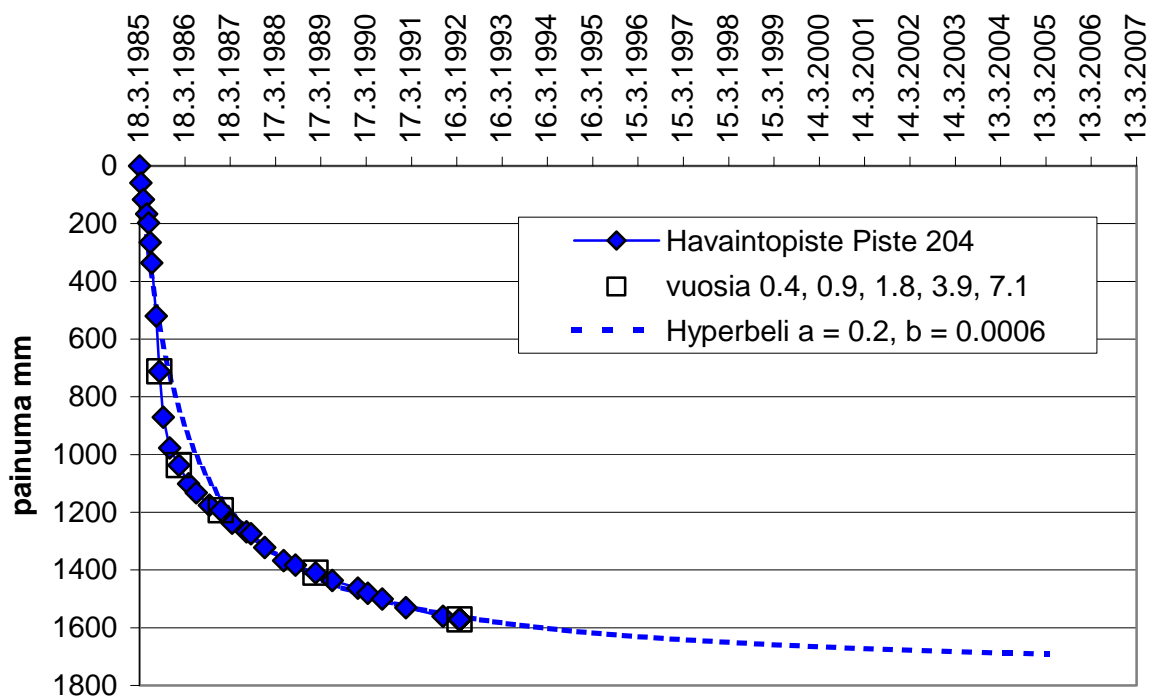
input

output

	a	b	Painuma	pain14.7	virh. mm
Hyperbeli	0.20	5.64E-04	1772	1664	ei havaint.



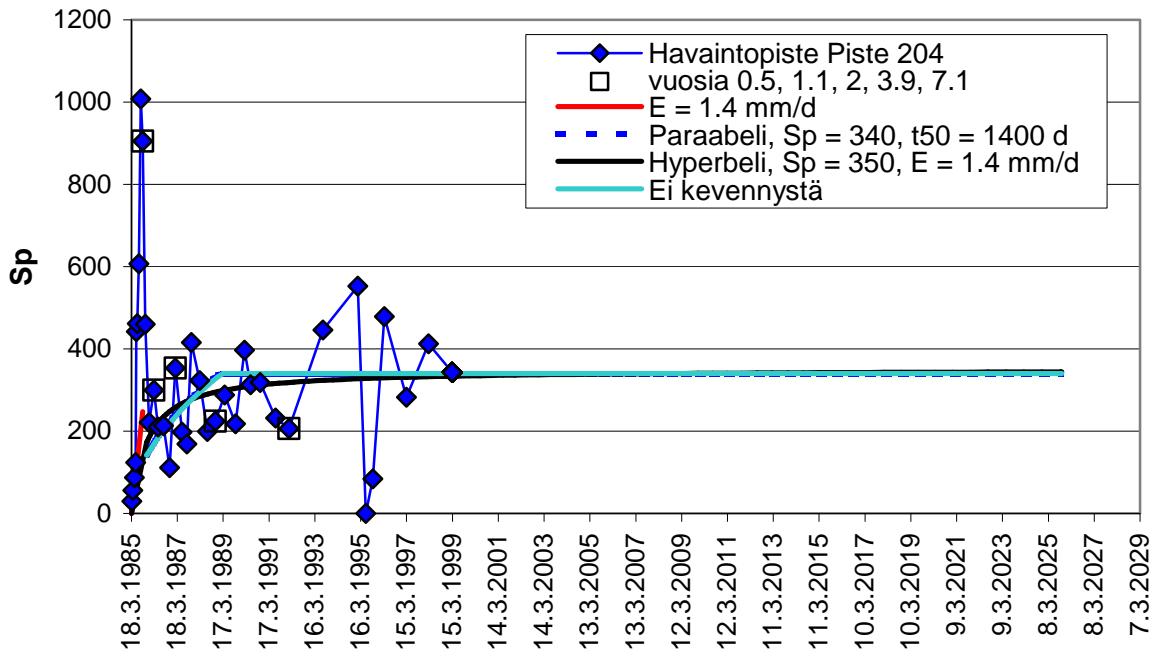
Aika-Painuma kuvaaja



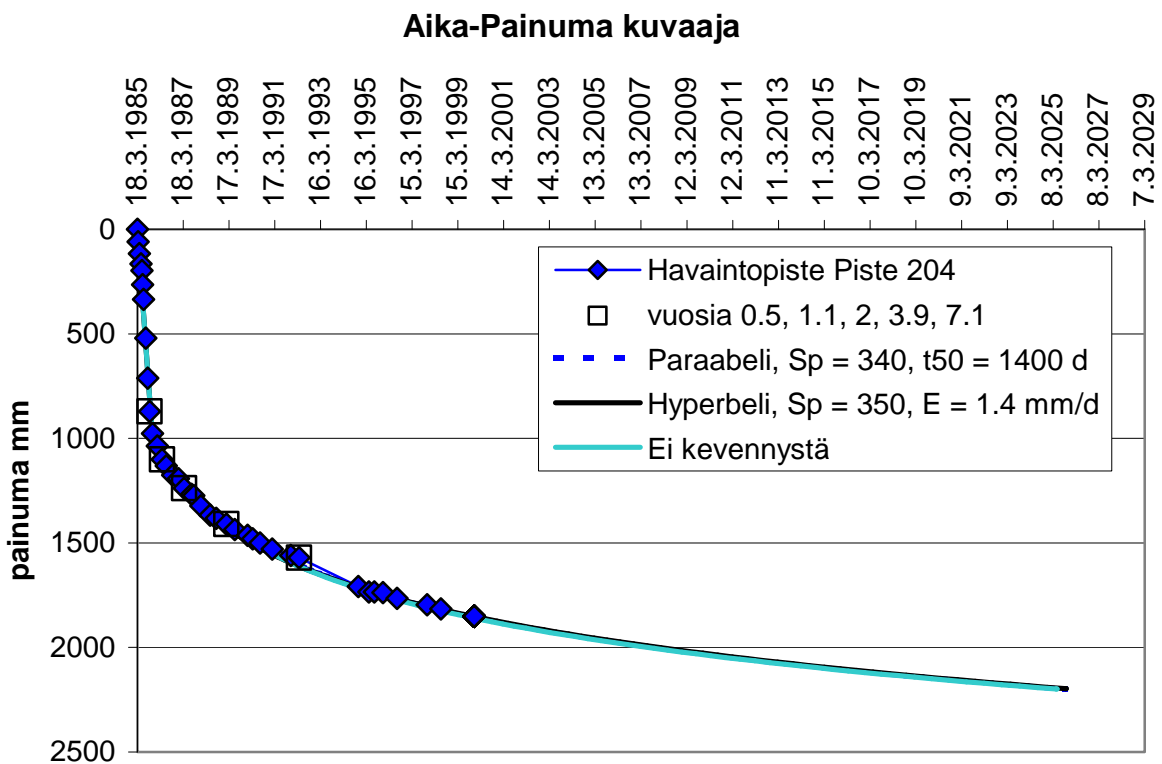
Vanhankaupungin lahti 2908, 15 v

Havaintopiste Piste 204

○ 1-puol. kl.	H	w	m (b = 0)	m	alkupai.	t0 (d)	pain. t (a)	tod. t
● 2-puol. kl.	20	90	6...10.1	5	1000	242	40	40
input				80				
	Sp	t50/E	rs	B	c _v	pain. 40	virh. mm	
Paraabeli	340	1400	59	0.085	5.1	2194	ei havaint.	
Hyperbeli	350	1.40	57	0.088		2193	ei havaint.	



Aika-Painumapotentiaali kuvaaja

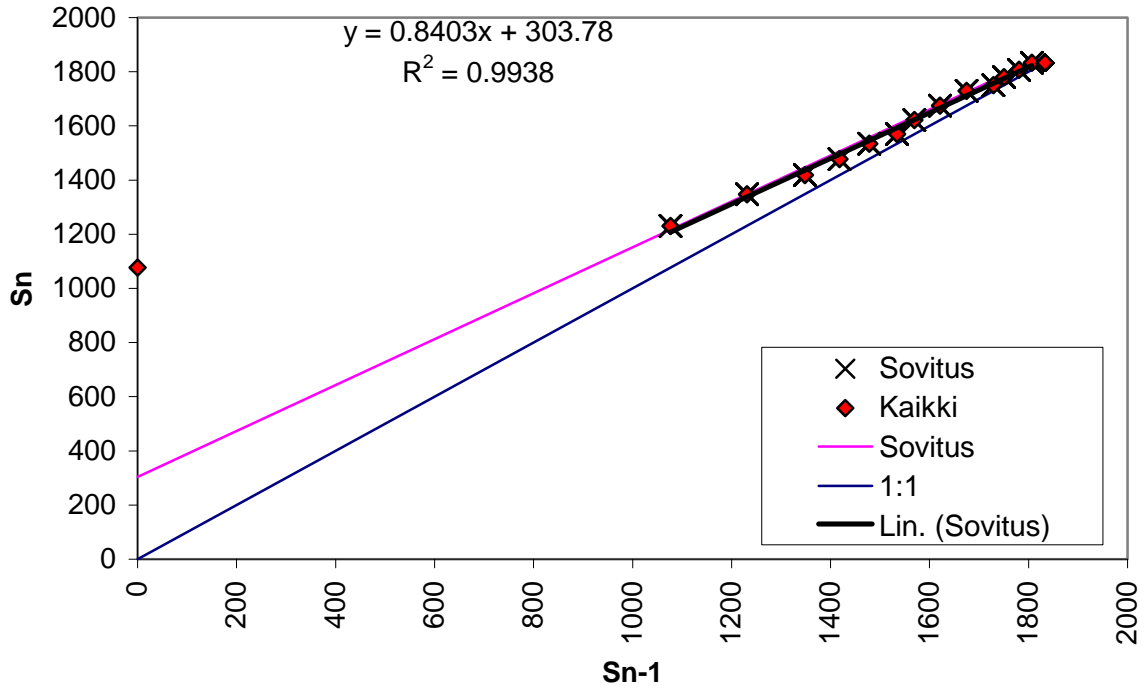


Aika-Painuma kuvaaja

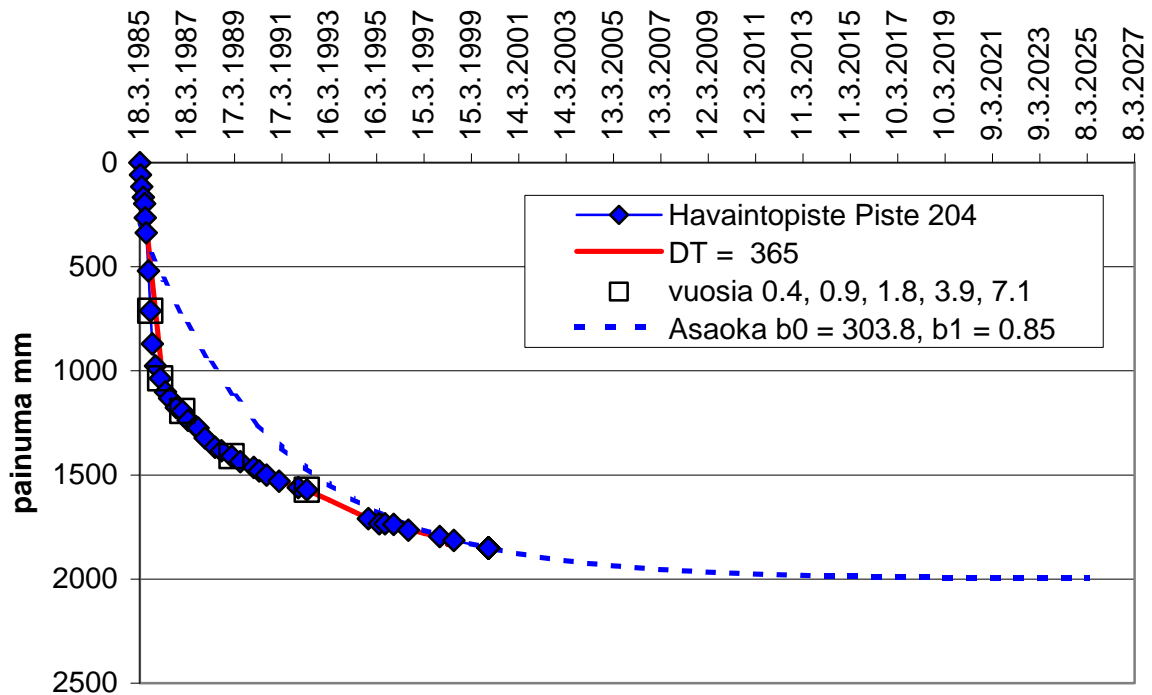


pain. t (a)	tod. t
40	40

input				output			
	β_0	β_1	t	Prim. Pain.		pain40	virh. mm
Asaoka	303.8	0.848	365.00	1999		1996	ei havaint.
	303.8	0.848	365.00				



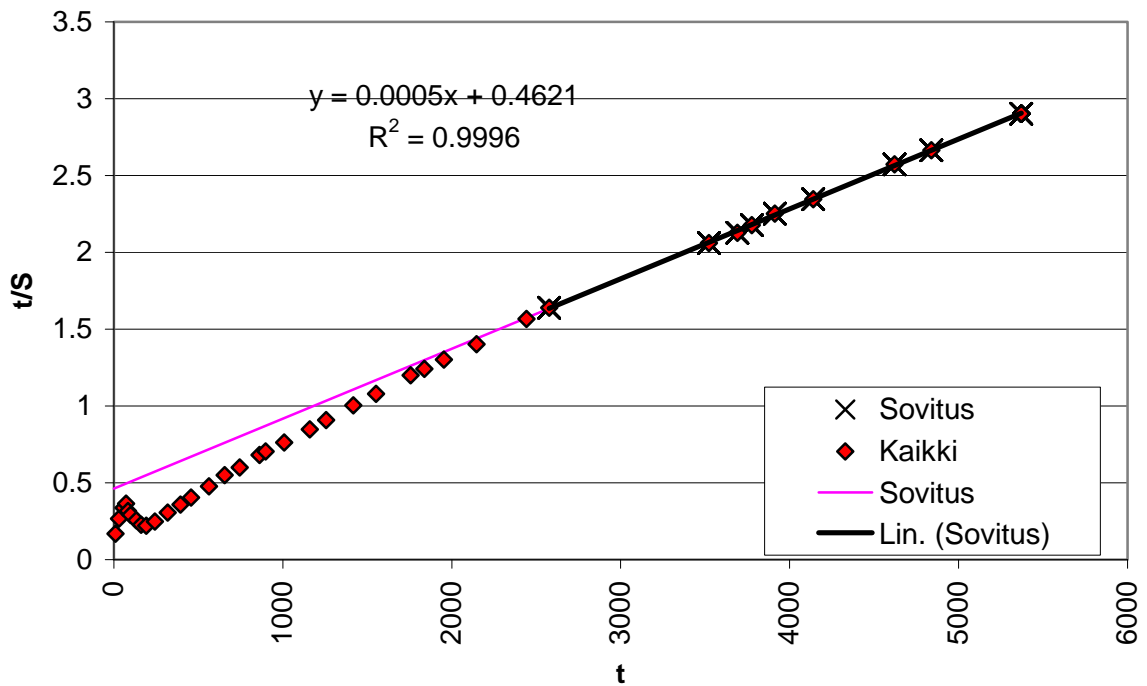
Aika-Painuma kuvaaja



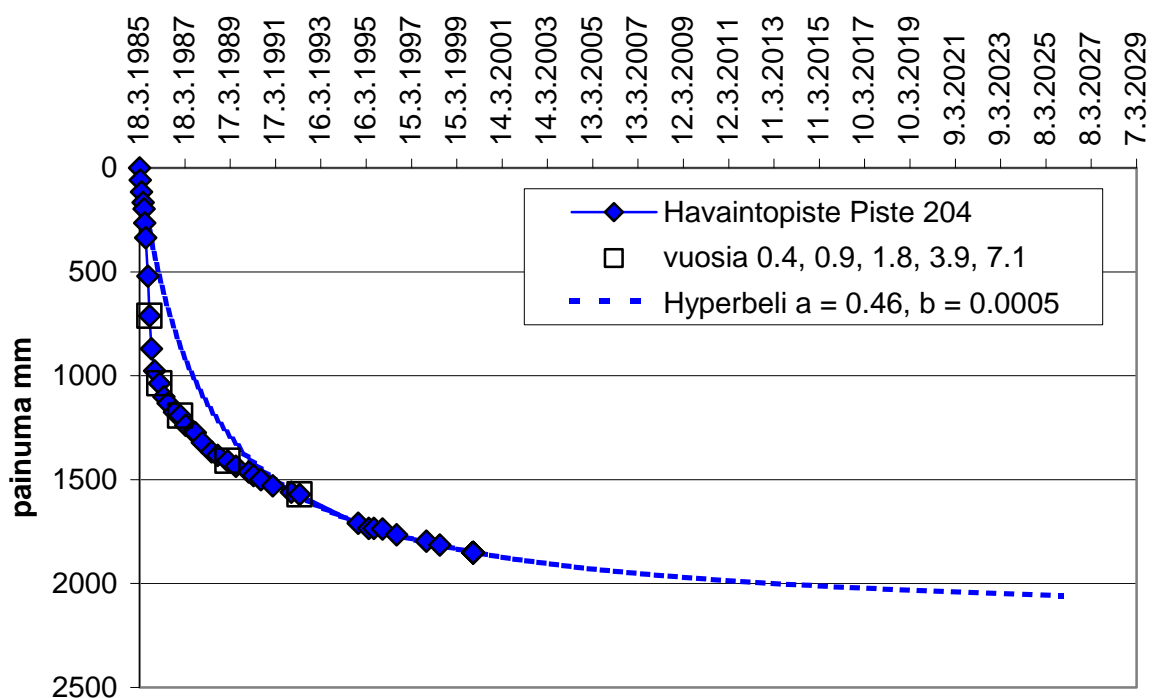


pain. t (a)	tod. t
40	40

input			output			
	a	b	Painuma		pain40	virh. mm
Hyperbeli	0.46	4.55E-04	2198		2055	ei havaint.



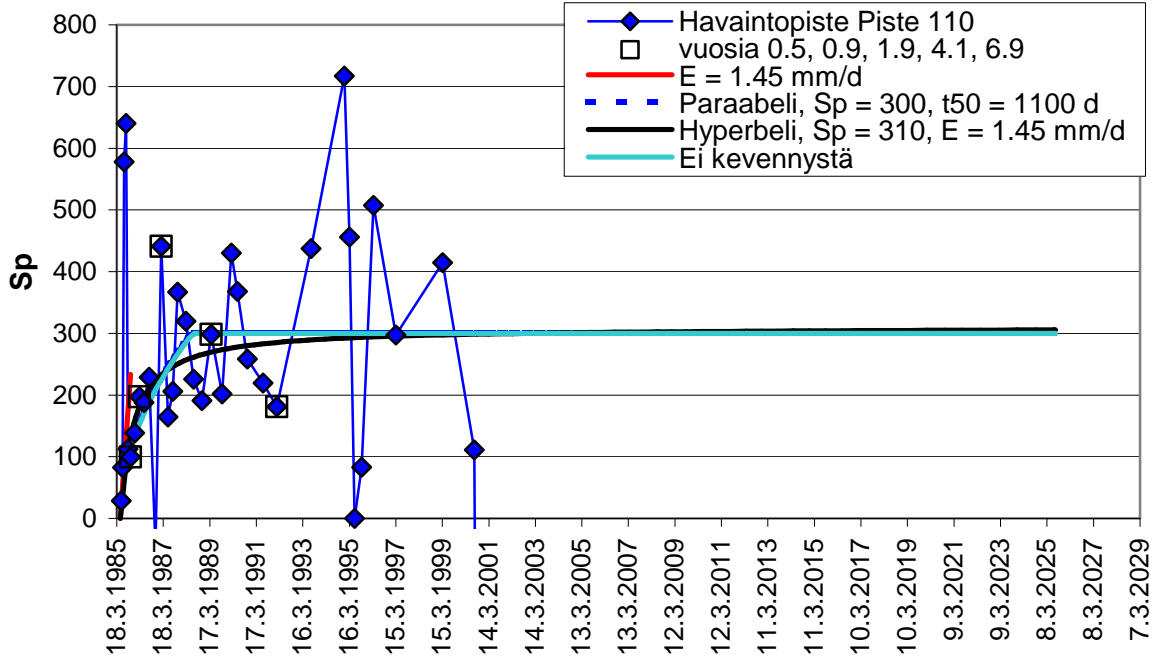
Aika-Painuma kuvaaja



Vanhankaupungin lahti 2908, 15 v

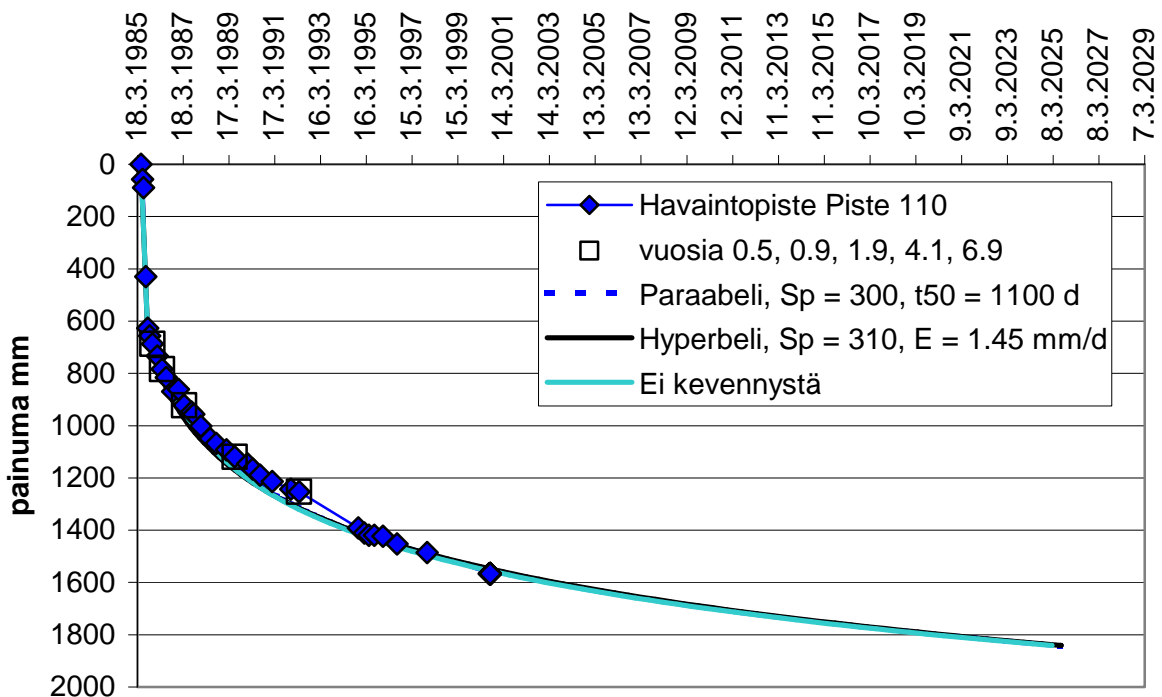
Havaintopiste Piste 110

○ 1-puol. kl	H	w	m (b = 0)	m	alkupai.	t0 (d)	pain. t (a)	tod. t
● 2-puol. kl	20	90	6...10.1	5	650	105	40	40
input				80				
	Sp	t50/E	rs	B	c _v	pain. 40	virh. mm	
Paraabeli	300	1100	67	0.075	6.5	1840	ei havaint.	
Hyperbeli	310	1.45	65	0.078		1840	ei havaint.	

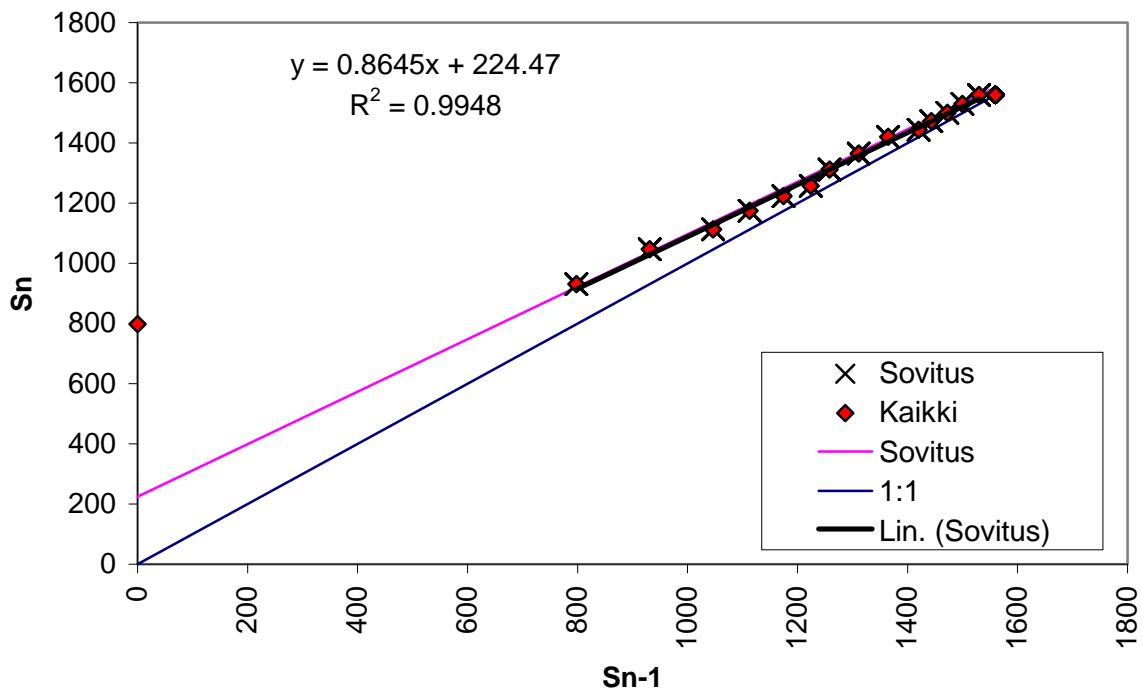


Aika-Painumapotentiaali kuvaaja

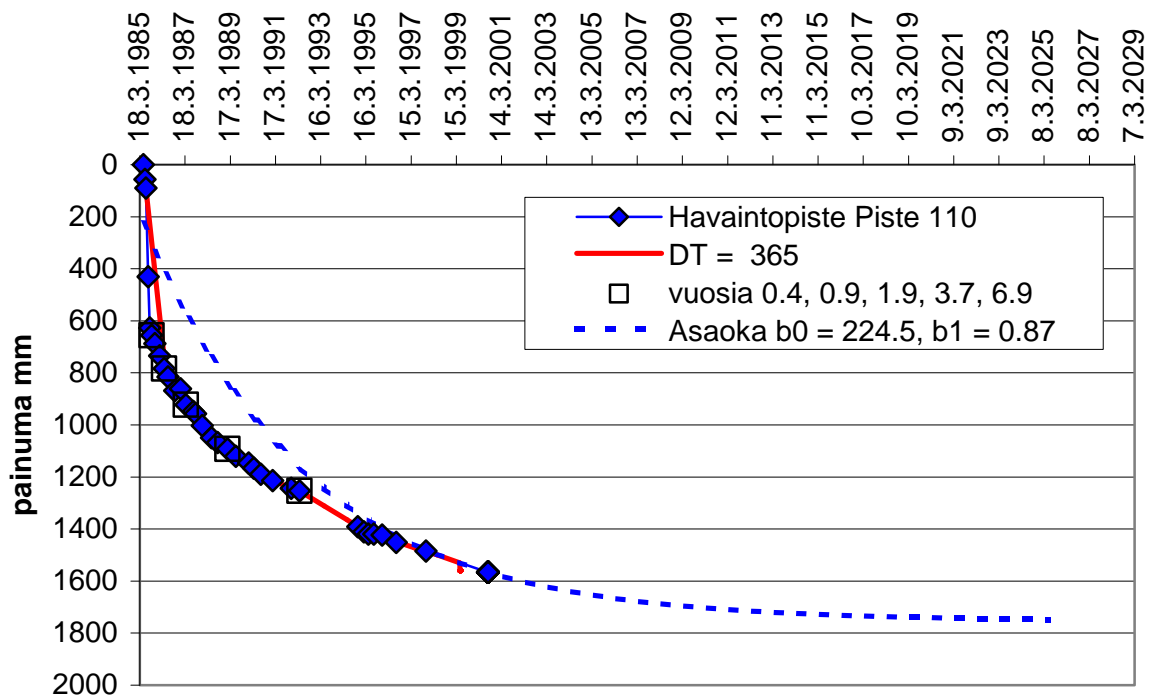
Aika-Painuma kuvaaja



Painumaennuste			Asaoka		LIITE IX / s. 14		
Vanhankaupungin lahti 2908, 15 v					Havaintopiste Piste 110		▼
					pain. t (a)	tod. t	
					40	40	
input				output			
	β_0	β_1	t	Prim. Pain.		pain40	virh. mm
Asaoka	224.5	0.872	365.00	1754		1747	ei havaint.
	224.5	0.872	365.00				



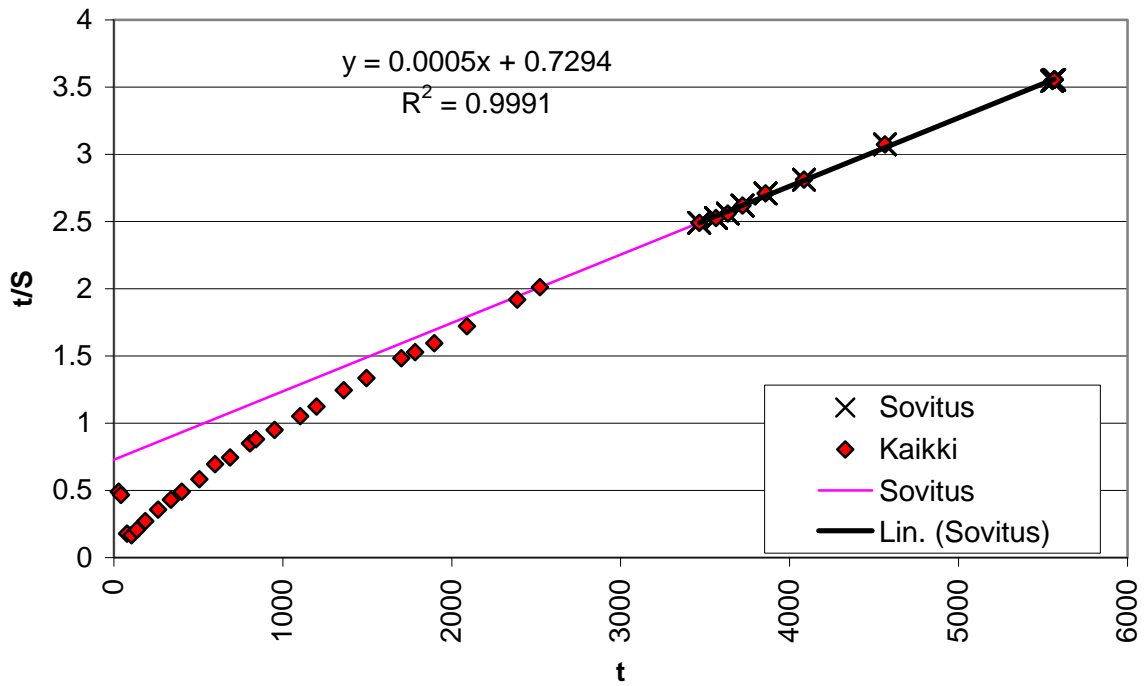
Aika-Painuma kuvaaja



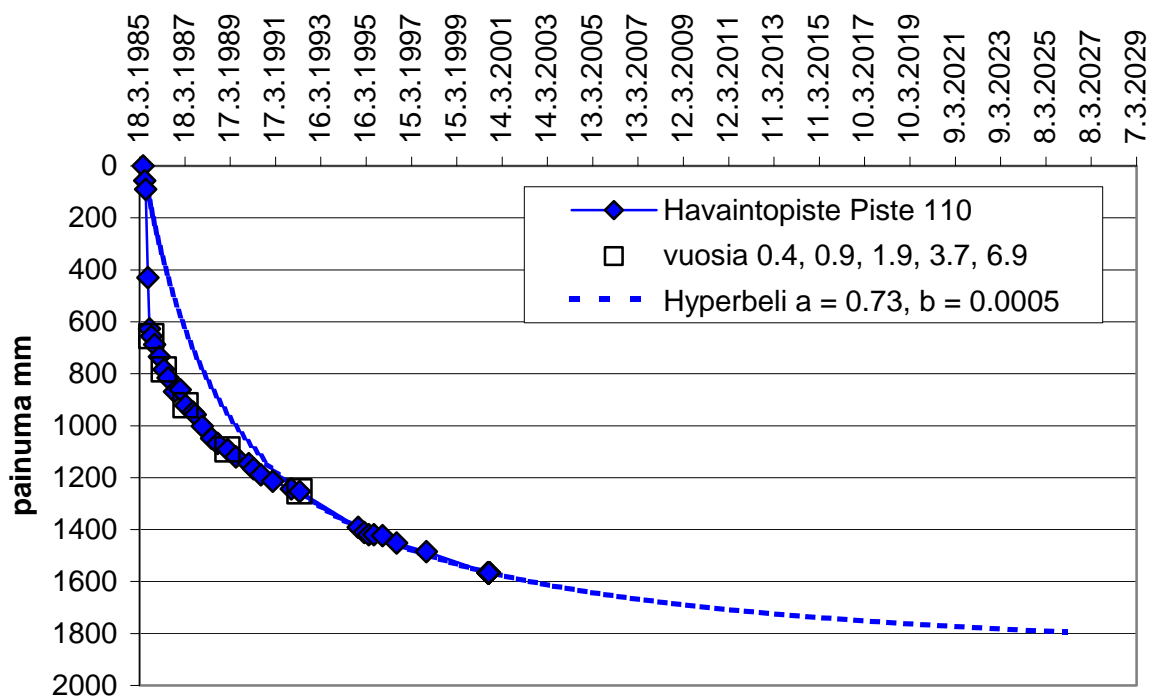


pain. t (a)	tod. t
40	40

input			output			
	a	b	Painuma		pain40	virh. mm
Hyperbeli	0.73	5.08E-04	1967		1791	ei havaint.



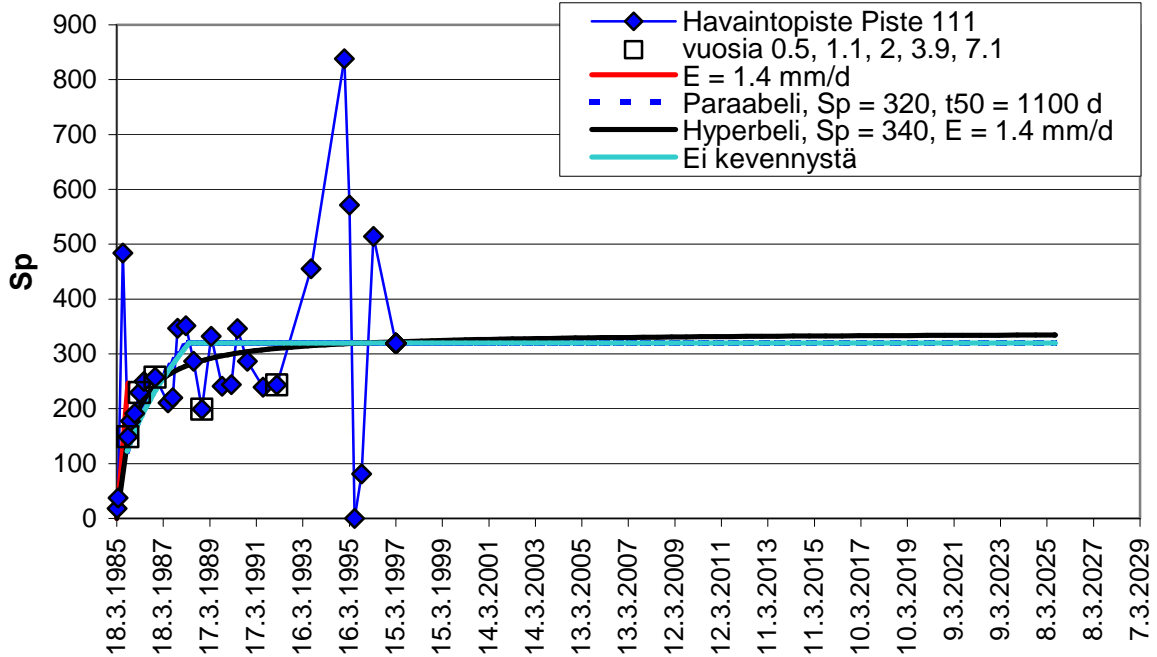
Aika-Painuma kuvaaja



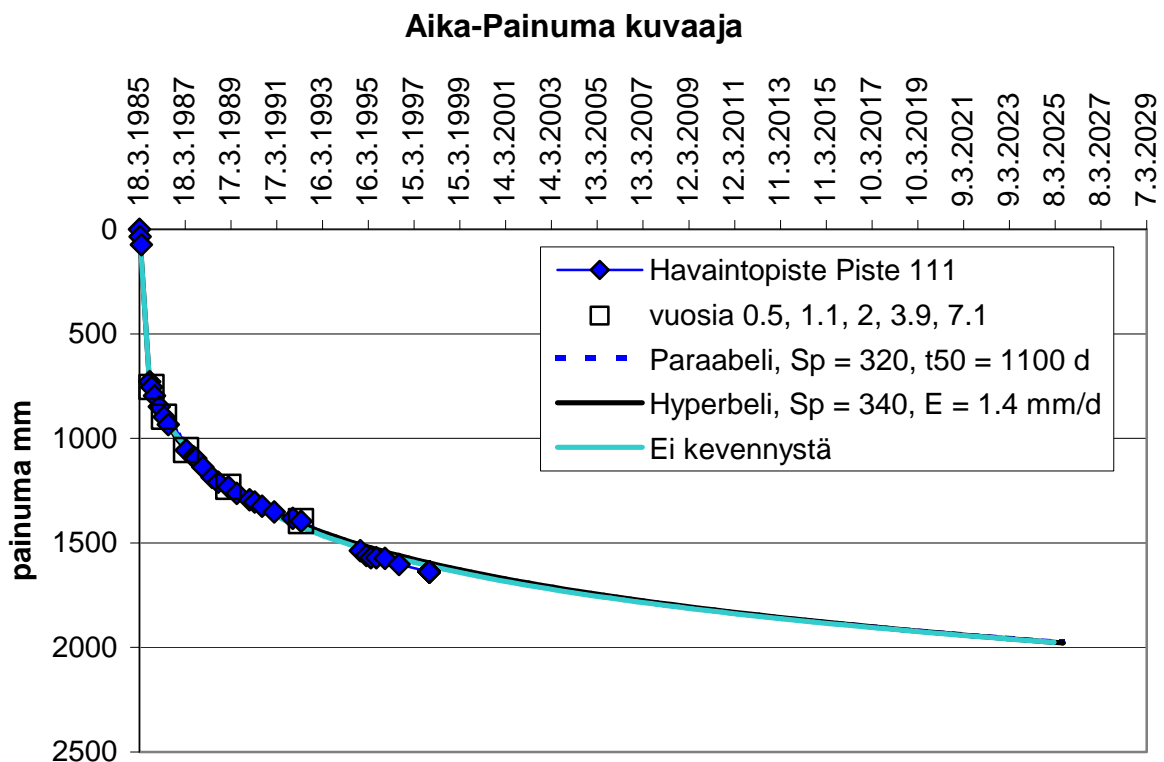
Vanhankaupungin lahti 2908, 15 v

Havaintopiste Piste 111

○ 1-puol. kl	H	w	m (b = 0)	m	alkupai.	t0 (d)	pain. t (a)	tod. t
● 2-puol. kl	20	90	6...10.1	5	750	161	40	40
input				80				
	Sp	t50/E	rs	B	c _v	pain. 40	virh. mm	
Paraabeli	320	1100	63	0.080	6.5	1973	ei havaint.	
Hyperbeli	340	1.40	59	0.085		1975	ei havaint.	



Aika-Painumapotentialiaali kuvaaja

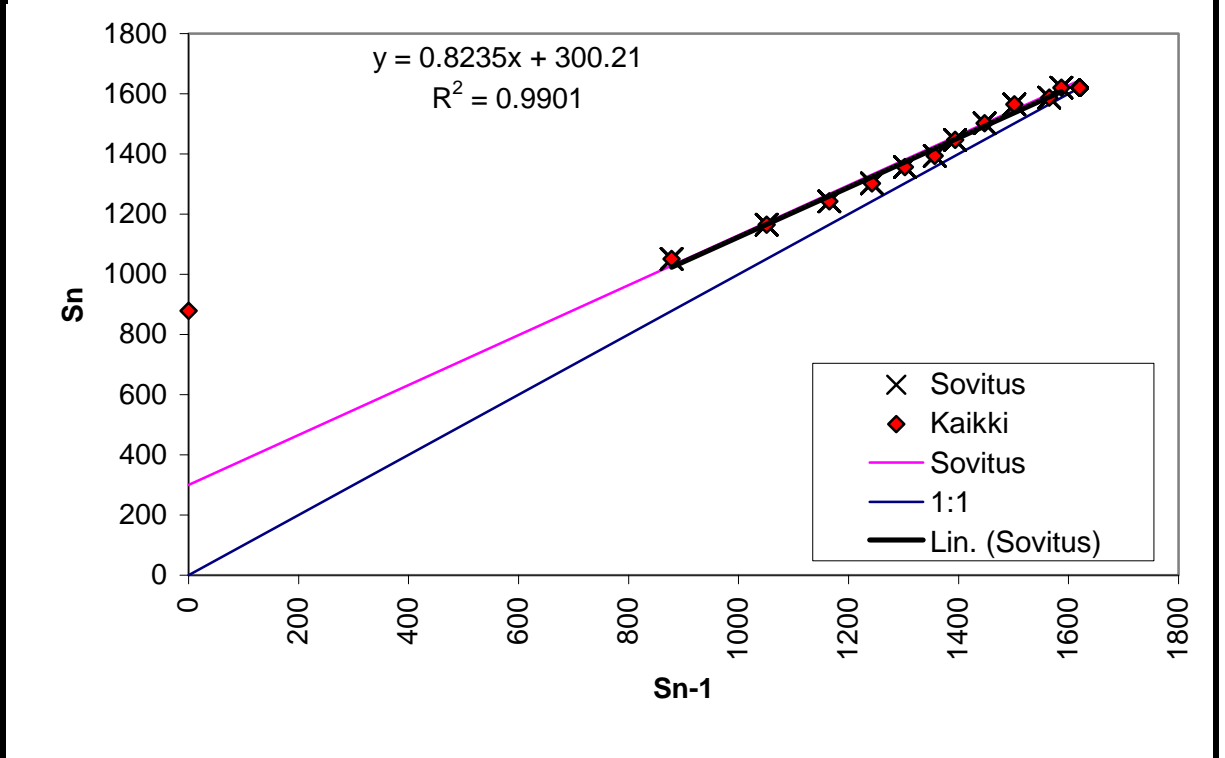


Aika-Painuma kuvaaja

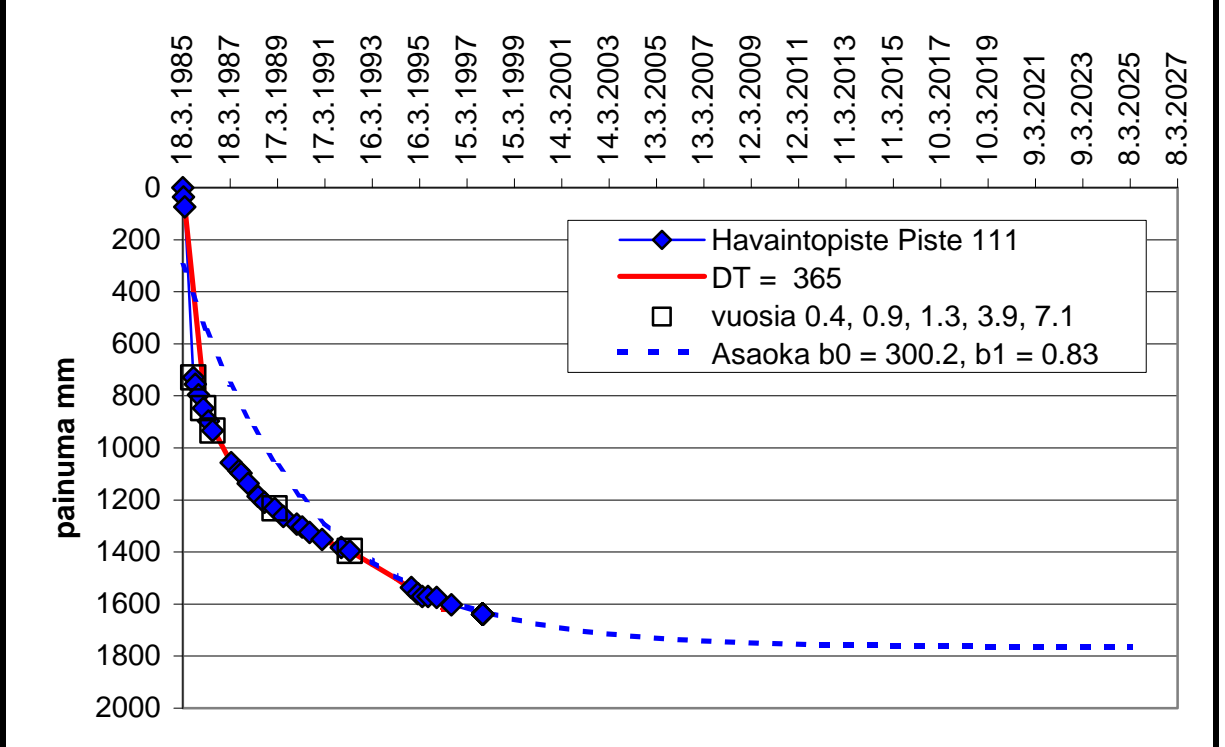


pain. t (a)	tod. t
40	40

input				output			
	β_0	β_1	t	Prim. Pain.		pain40	virh. mm
Asaoka	300.2	0.830	365.00	1766		1765	ei havaint.
	300.2	0.830	365.00				



Aika-Painuma kuvaaja





pain. t (a)

tod. t

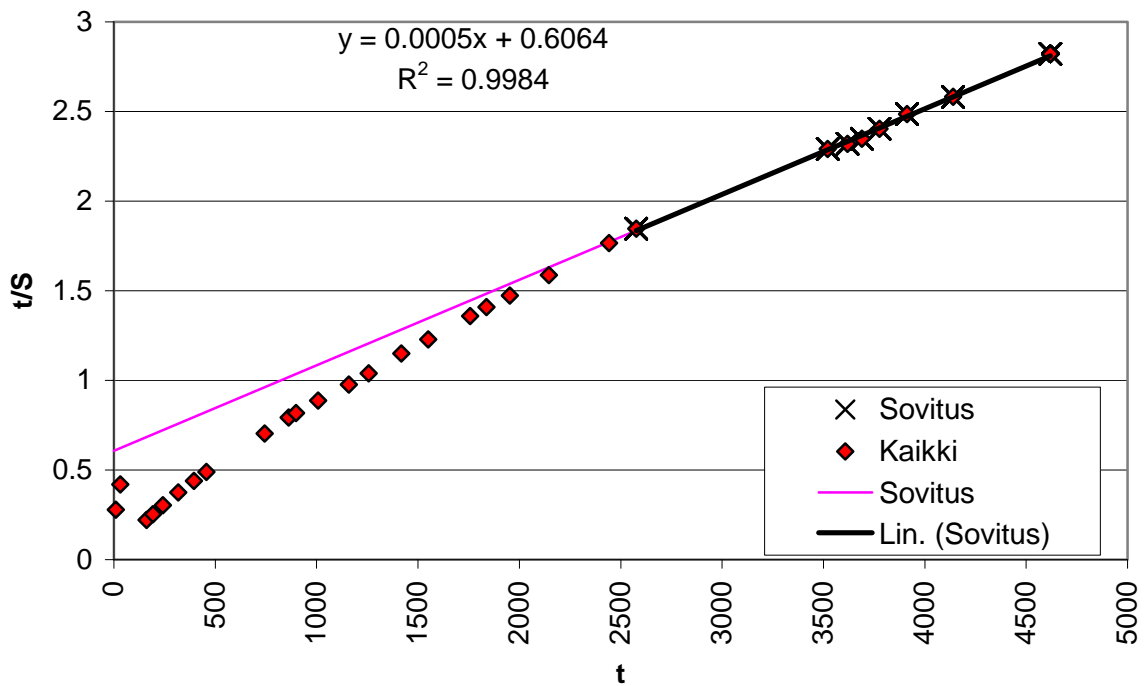
40

40

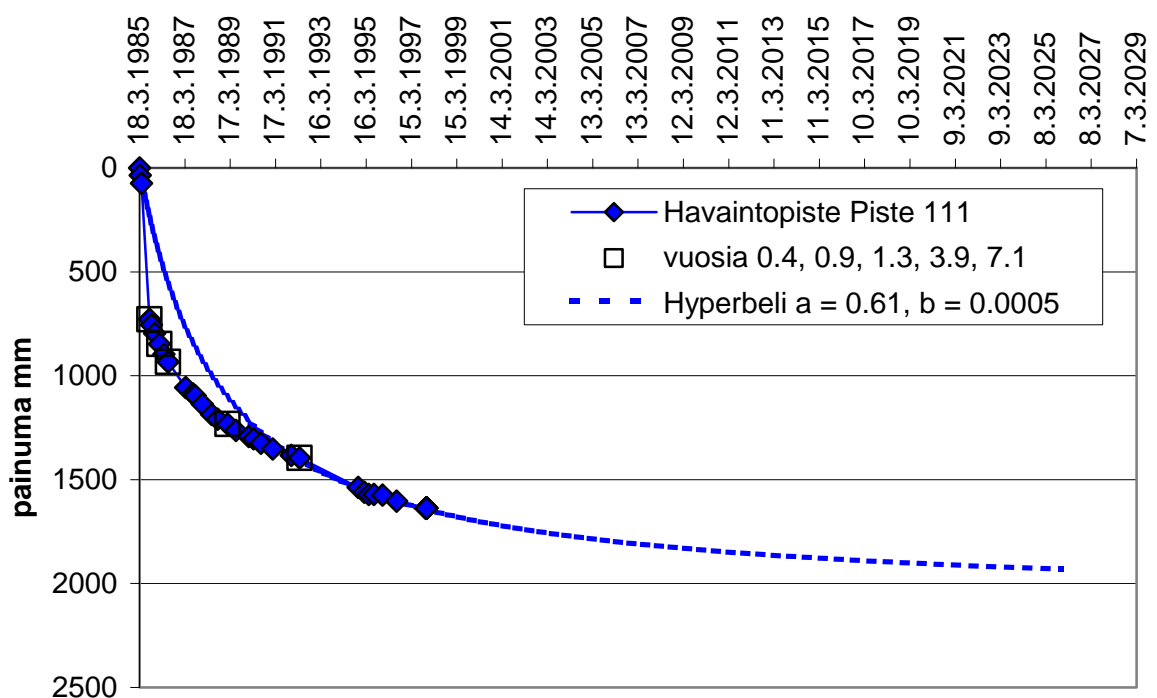
input

output

	a	b	Painuma	pain40	virh. mm
Hyperbeli	0.61	4.77E-04	2095	1928	ei havaint.



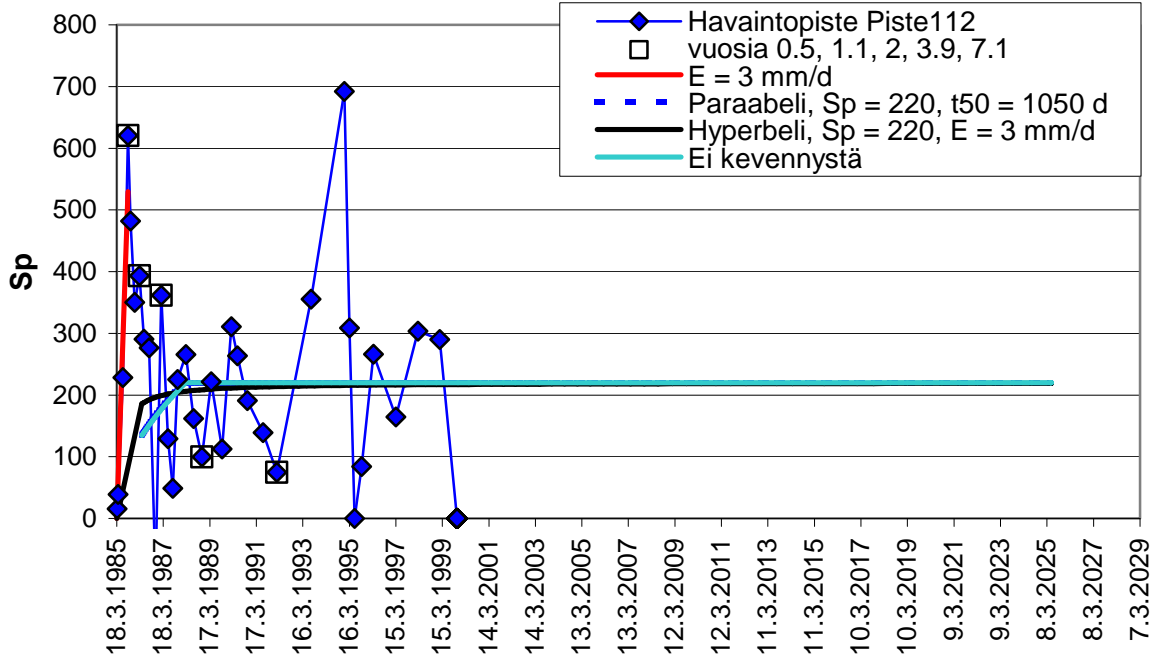
Aika-Painuma kuvaaja



Vanhankaupungin lahti 2908, 15 v

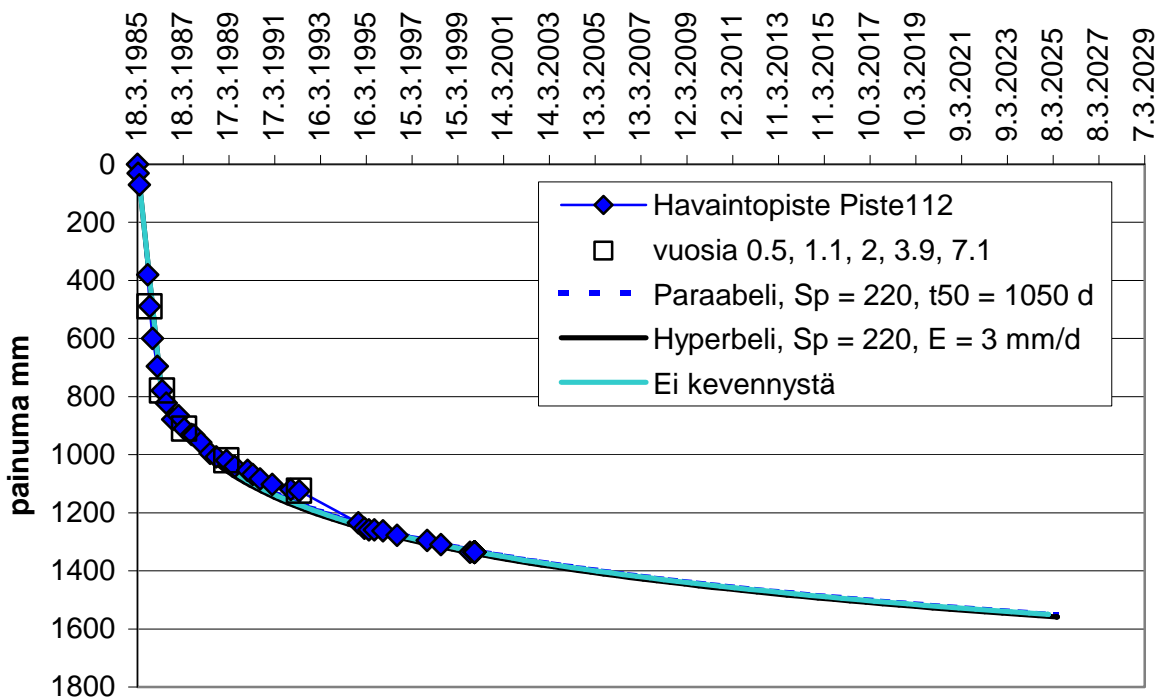
Havaintopiste Piste112

○ 1-puol. kl	H	w	m (b = 0)	m	alkupai.	t0 (d)	pain. t (a)	tod. t
● 2-puol. kl	20	90	6...10.1	5	800	394	40	40
input				80				
	Sp	t50/E	rs	B	c _v	pain. 40	virh. mm	
Paraabeli	220	1050	91	0.055	6.8	1550	ei havaint.	
Hyperbeli	220	3.00	91	0.055		1558	ei havaint.	



Aika-Painumapotentiaali kuvaaja

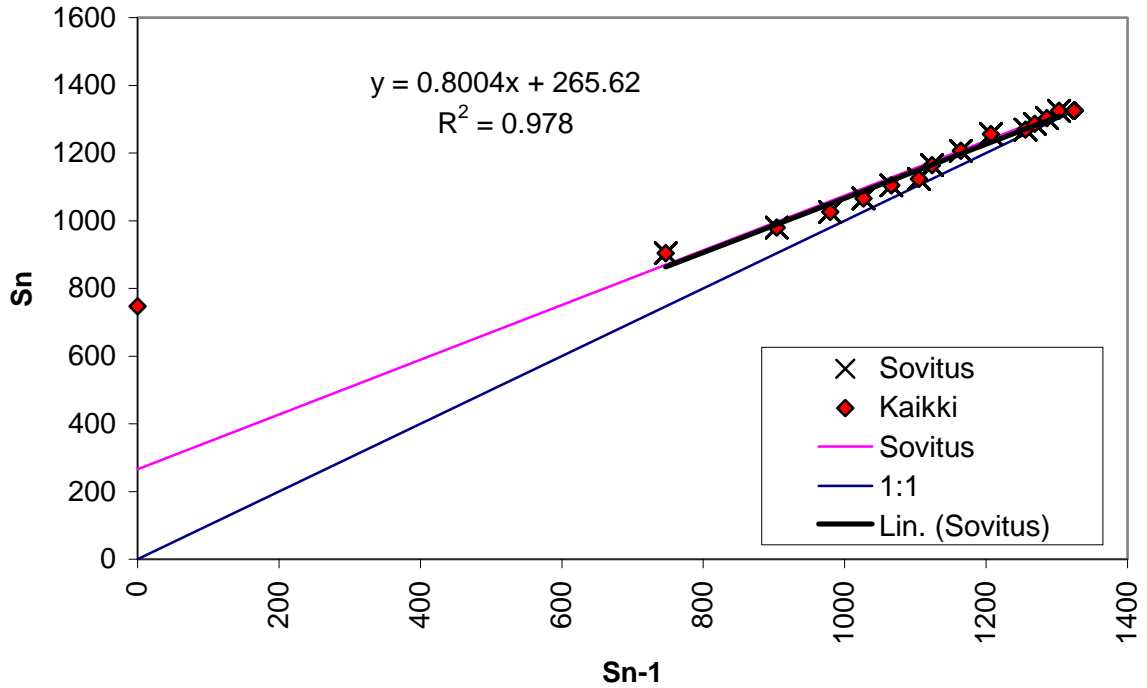
Aika-Painuma kuvaaja



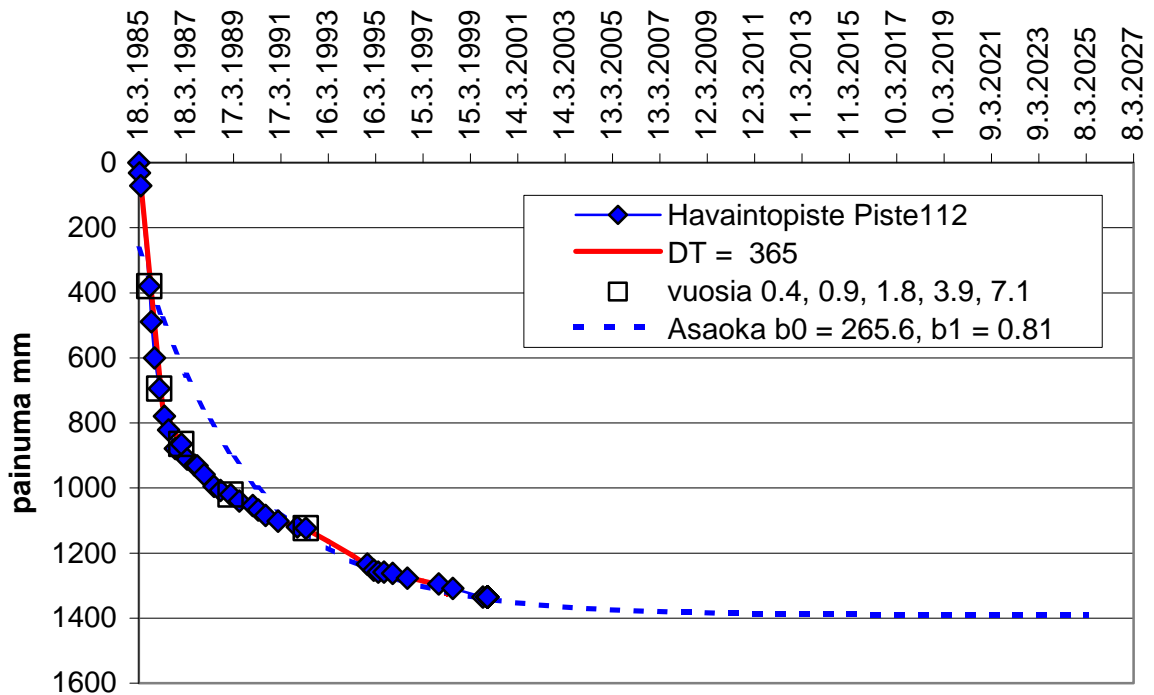


pain. t (a)	tod. t
40	40

input				output			
	β_0	β_1	t	Prim. Pain.		pain40	virh. mm
Asaoka	265.6	0.809	365.00	1391		1390	ei havaint.
	265.6	0.809	365.00				



Aika-Painuma kuvaaja





pain. t (a)

tod. t

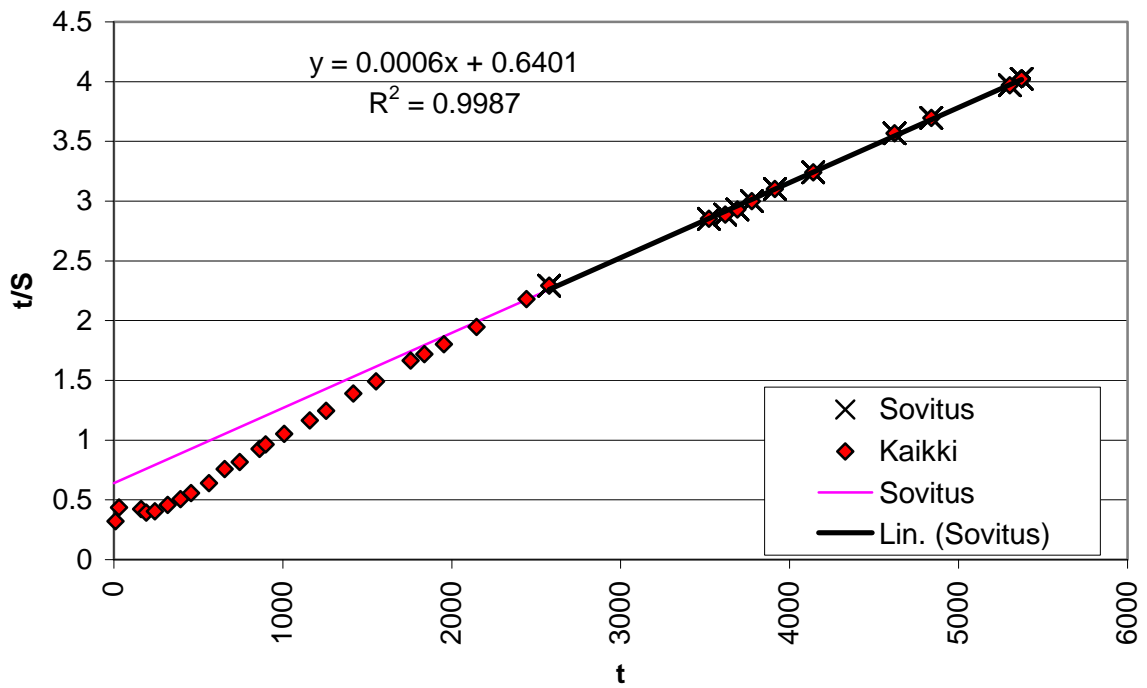
40

40

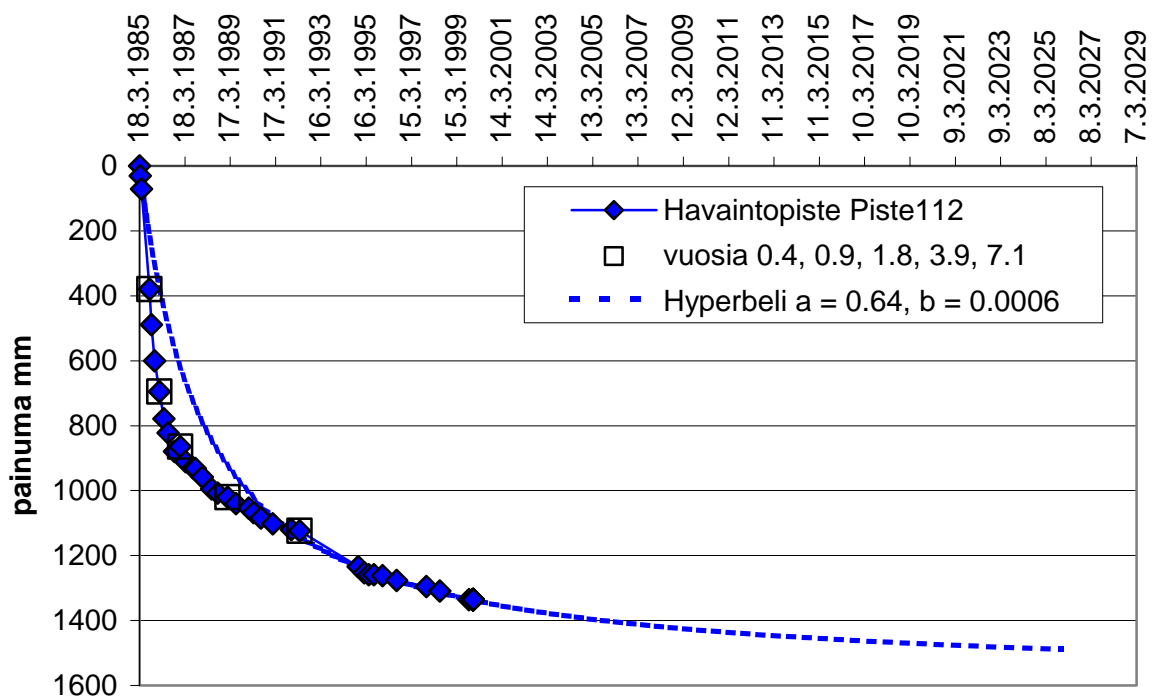
input

output

	a	b	Painuma	pain40	virh. mm
Hyperbeli	0.64	6.29E-04	1591	1487	ei havaint.



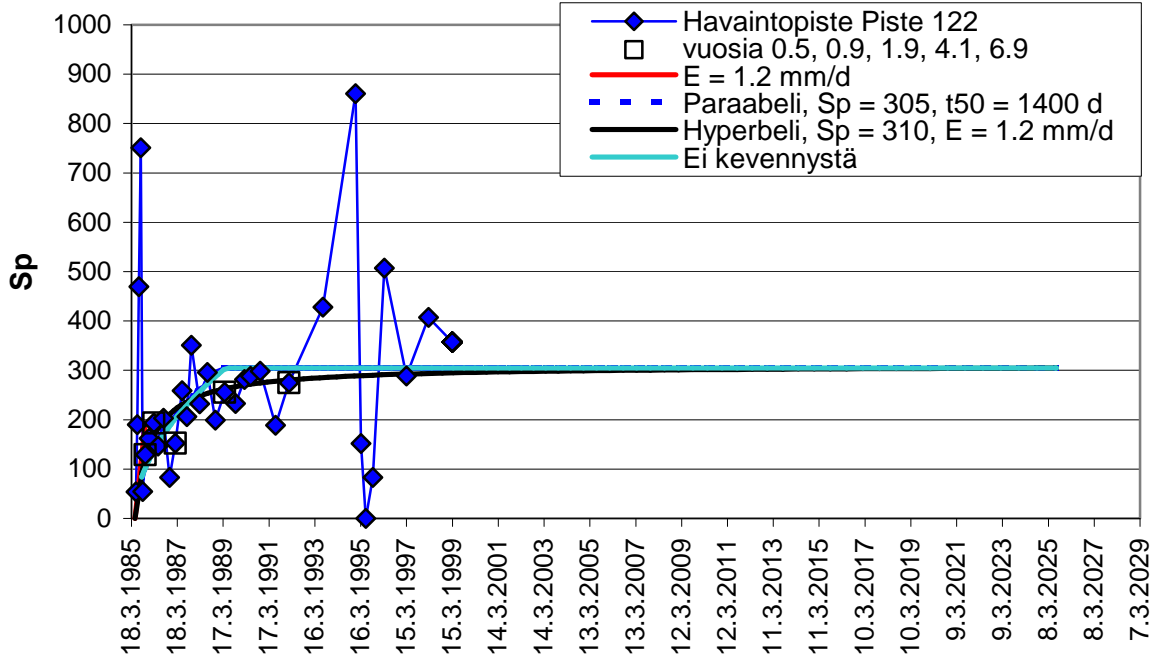
Aika-Painuma kuvaaja



Vanhankaupungin lahti 2908, 15 v

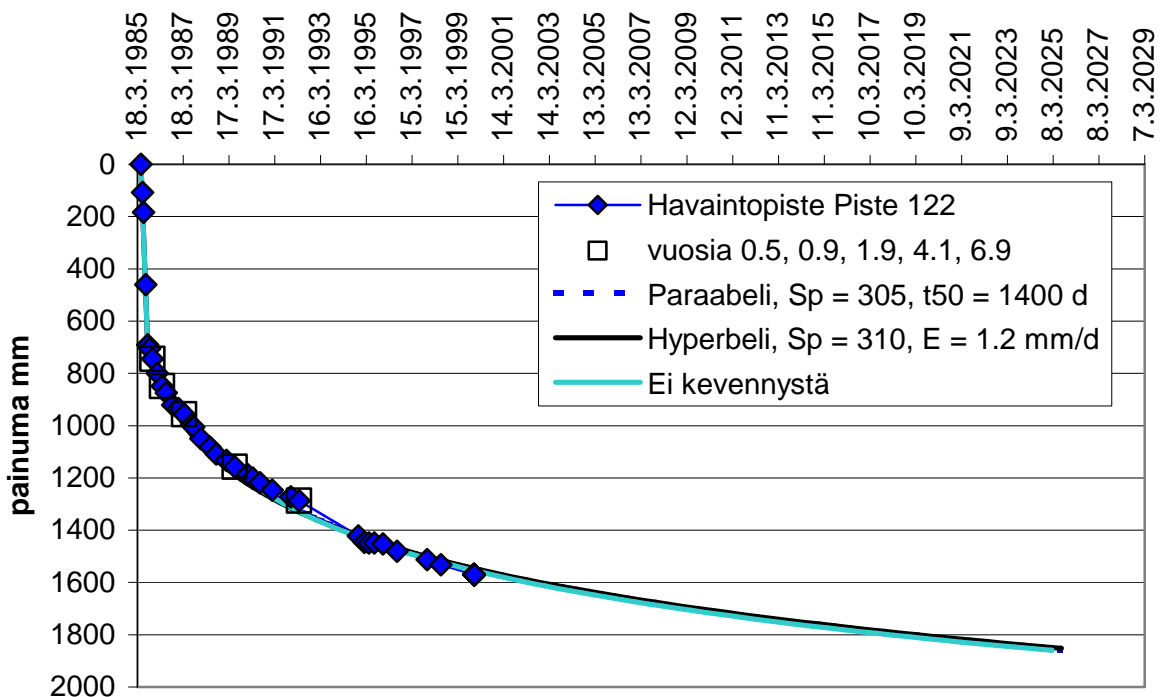
Havaintopiste Piste 122

○ 1-puol. kl	H	w	m (b = 0)	m	alkupai.	t0 (d)	pain. t (a)	tod. t
● 2-puol. kl	20	90	6...10.1	5	700	105	40	40
input					80			
	Sp	t50/E	rs	B	c _v	pain. 40	virh. mm	
Paraabeli	305	1400	66	0.076	5.1	1858	ei havaint.	
Hyperbeli	310	1.20	65	0.078		1850	ei havaint.	



Aika-Painumapotentiaali kuvaaja

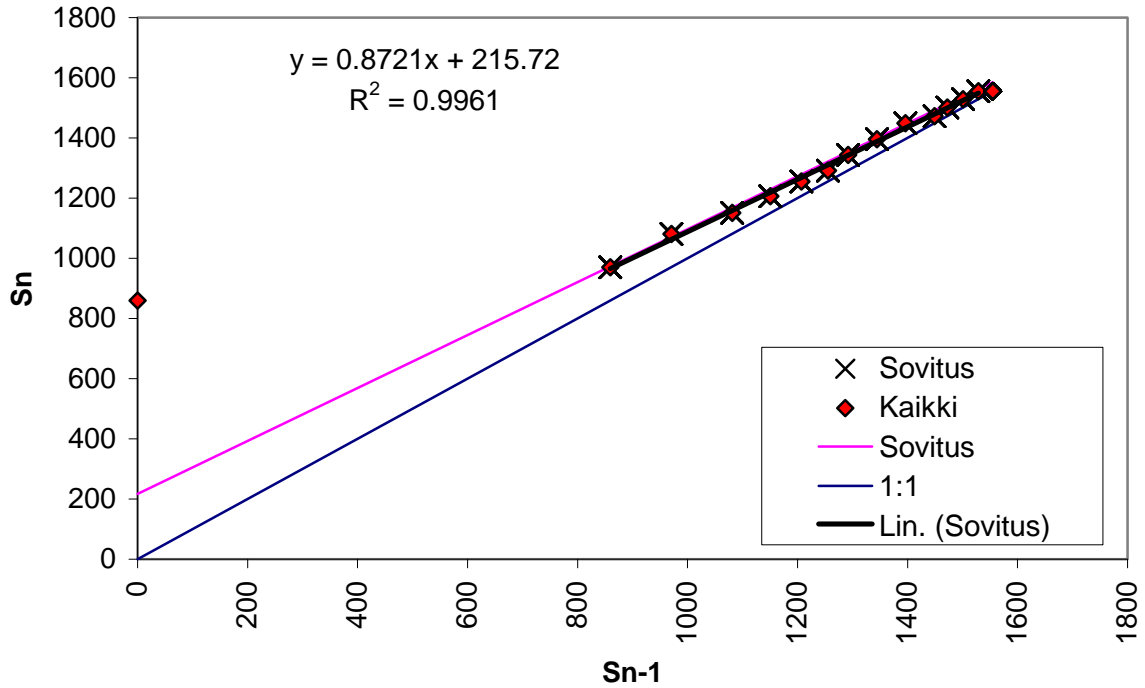
Aika-Painuma kuvaaja



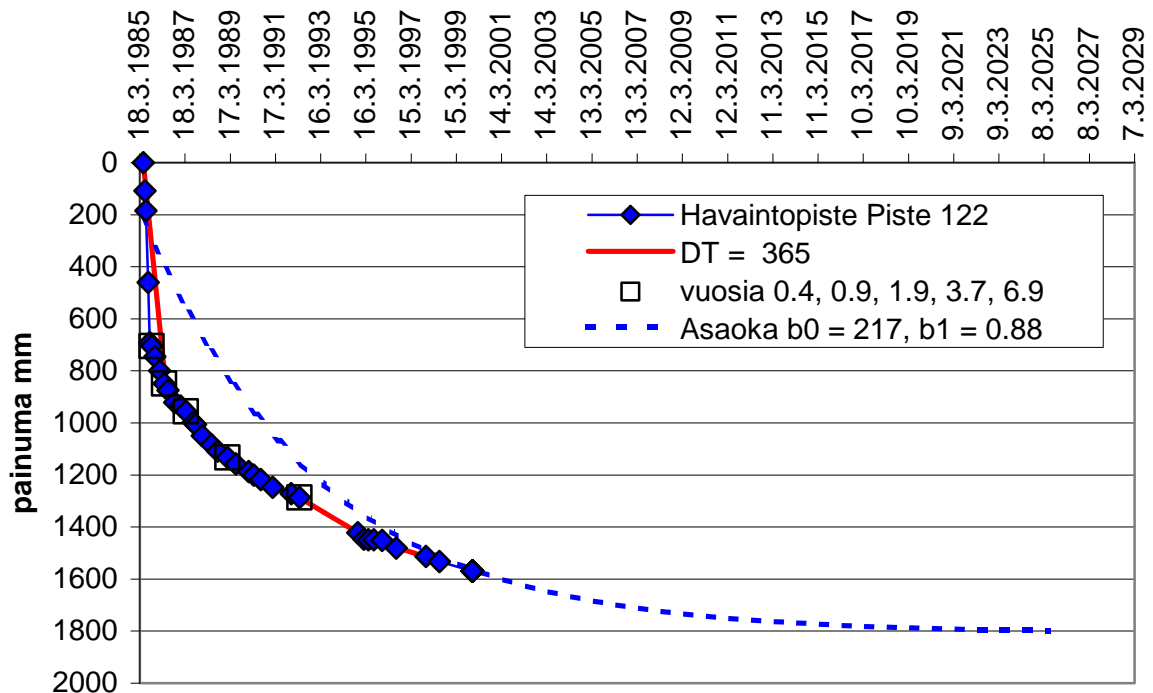


pain. t (a)	tod. t
40	40

input				output			
	β_0	β_1	t	Prim. Pain.		pain40	virh. mm
Asaoka	217.0	0.880	365.00	1808		1799	ei havaint.
	217.0	0.880	365.00				



Aika-Painuma kuvaaja





pain. t (a)

tod. t

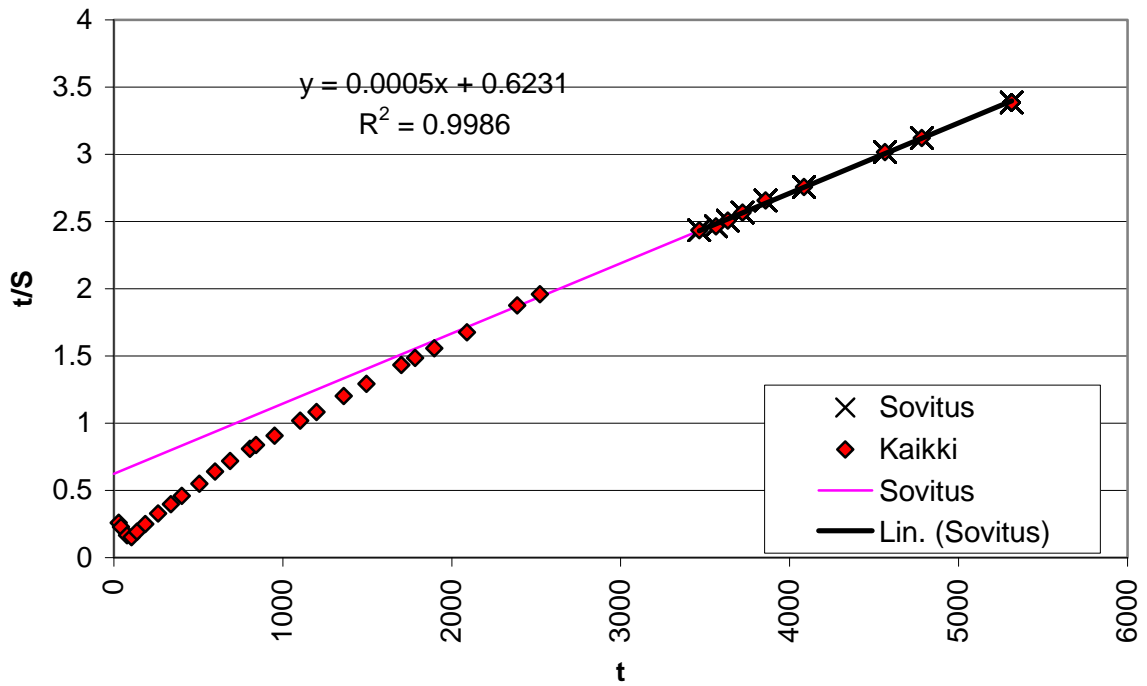
40

40

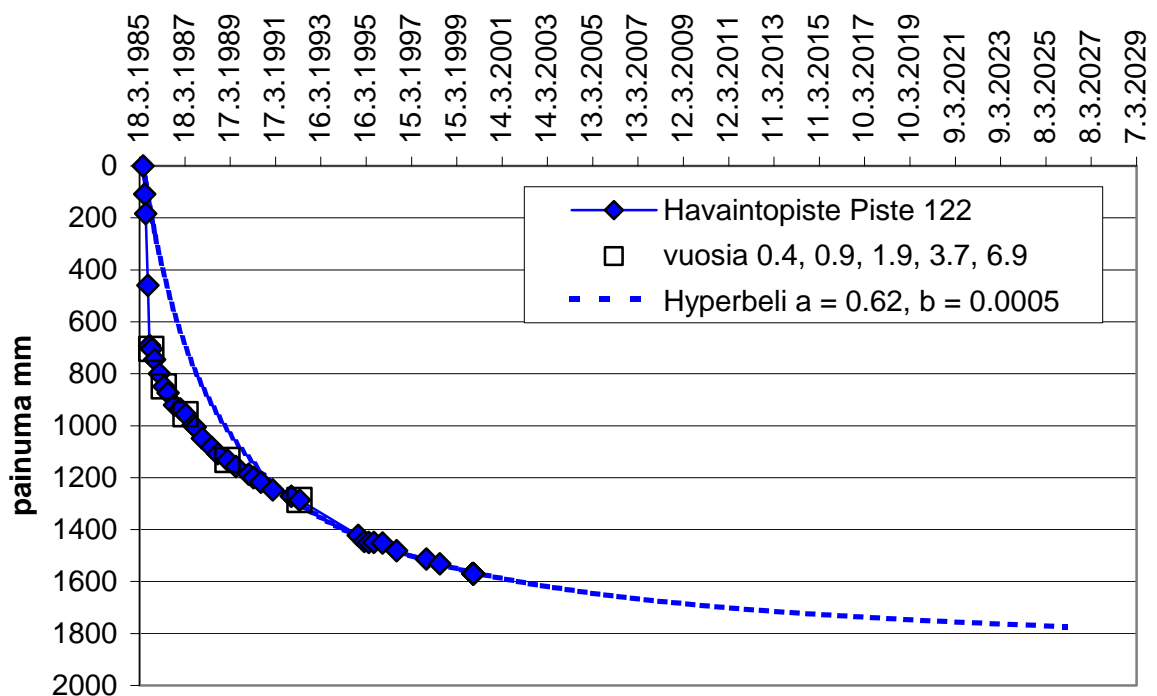
input

output

	a	b	Painuma	pain40	virh. mm
Hyperbeli	0.62	5.22E-04	1916	1771	ei havaint.



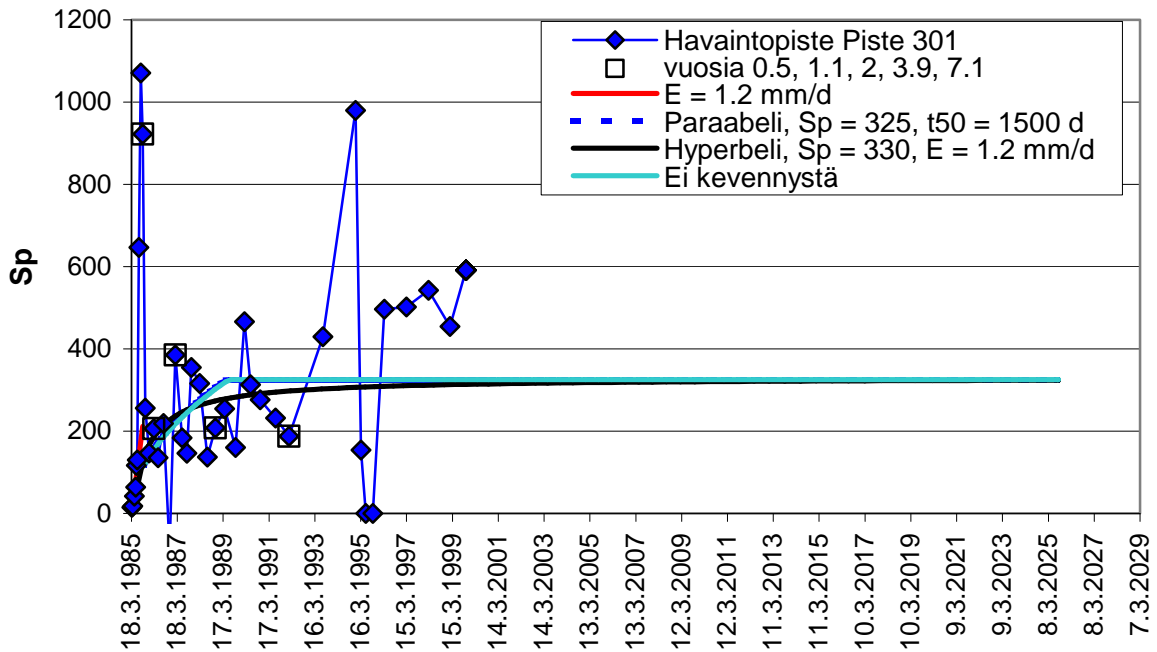
Aika-Painuma kuvaaja



Vanhankaupungin lahti 2908, 15 v

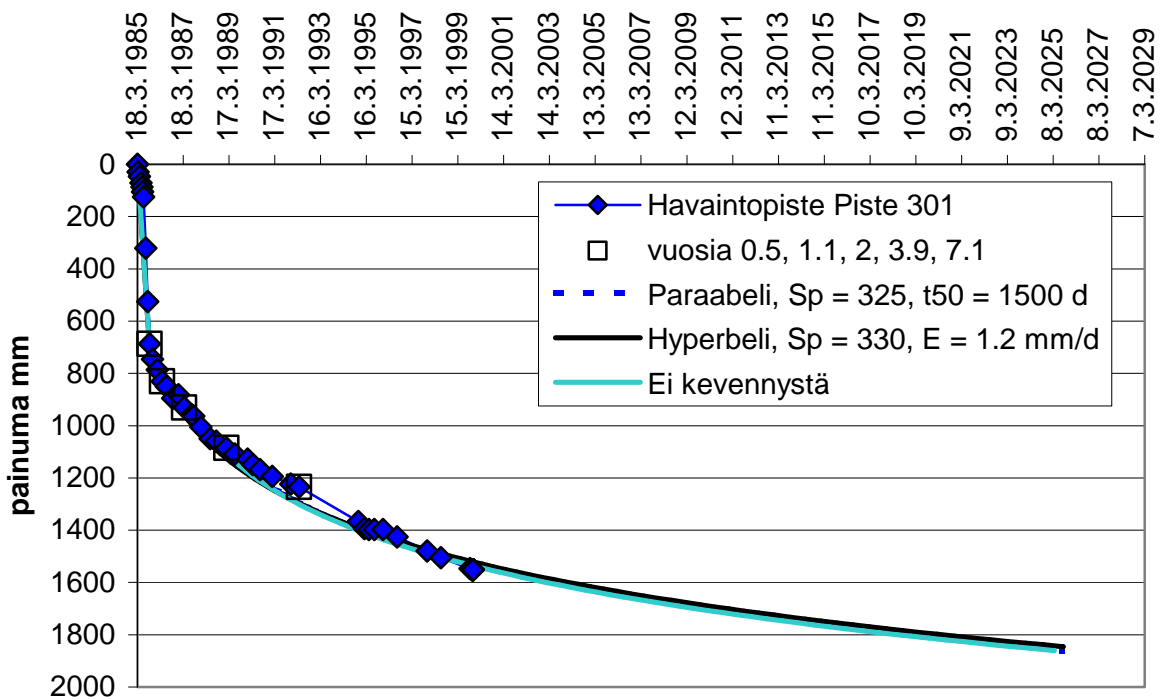
Havaintopiste Piste 301

○ 1-puol. kl	H	w	m (b = 0)	m	alkupai.	t0 (d)	pain. t (a)	tod. t
● 2-puol. kl	20	90	6...10.1	5	700	192	40	40
input				80				
	Sp	t50/E	rs	B	c _v	pain. 40	virh. mm	
Paraabeli	325	1500	62	0.081	4.8	1857	ei havaint.	
Hyperbeli	330	1.20	61	0.083		1842	ei havaint.	



Aika-Painumapotentiaali kuvaaja

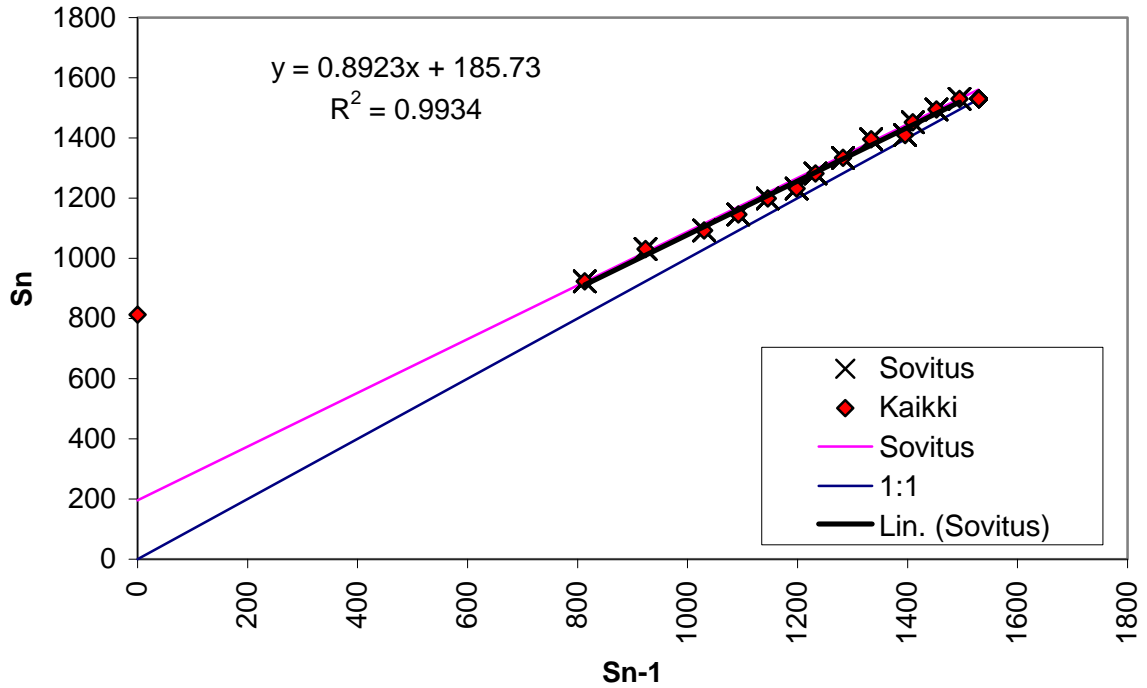
Aika-Painuma kuvaaja



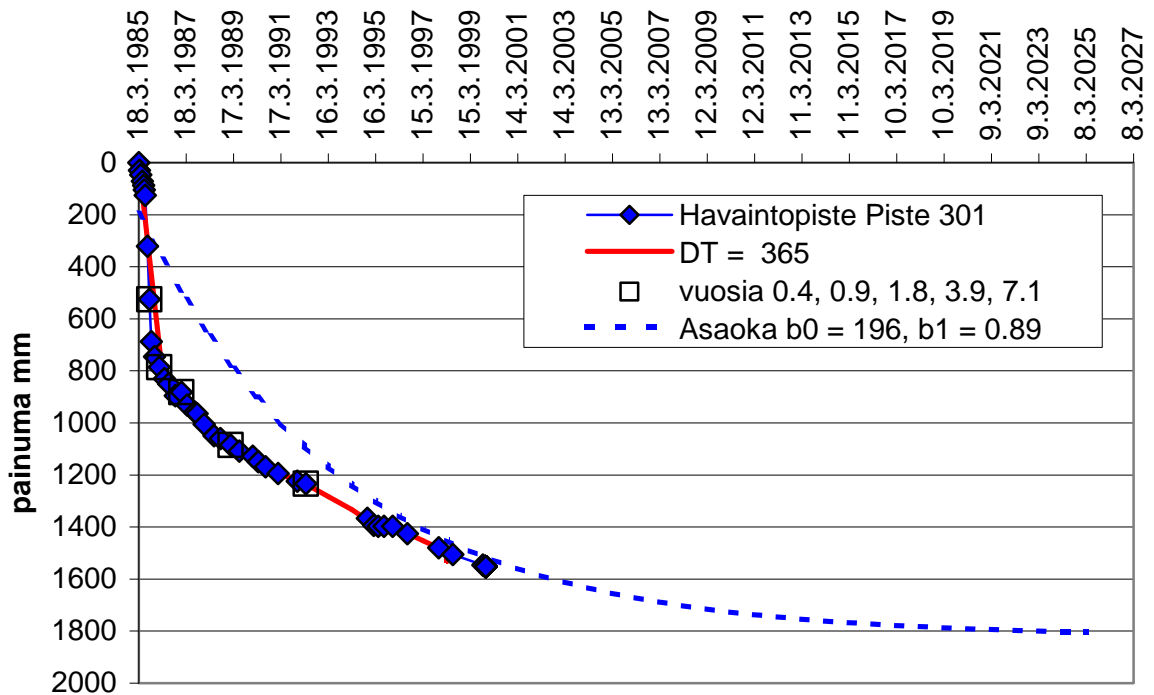


pain. t (a)	tod. t
40	40

input				output			
	β_0	β_1	t	Prim. Pain.		pain40	virh. mm
Asaoka	196.0	0.892	365.00	1821		1804	ei havaint.
	196.0	0.892	365.00				



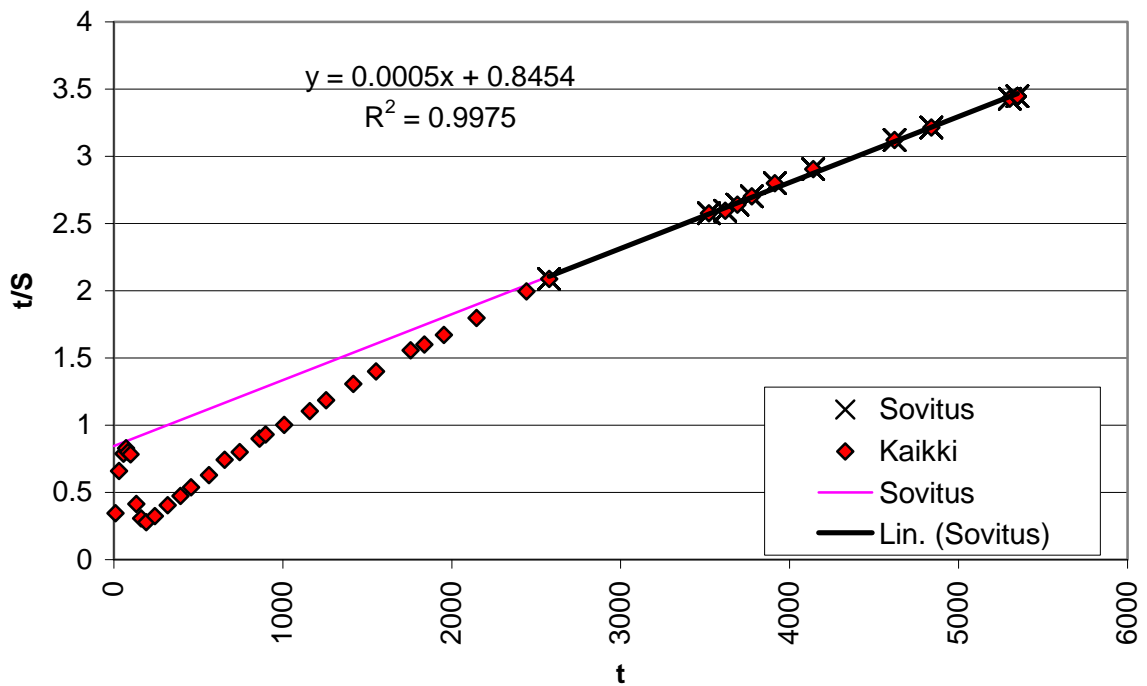
Aika-Painuma kuvaaja



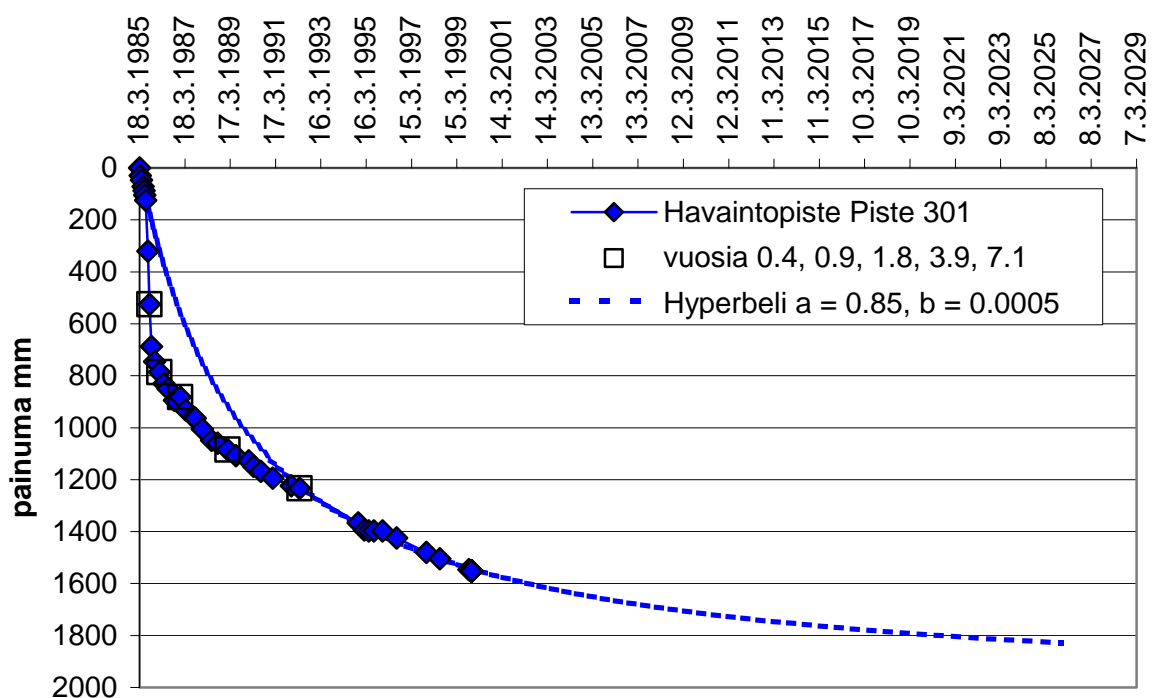


pain. t (a)	tod. t
40	40

input			output			
	a	b	Painuma		pain40	virh. mm
Hyperbeli	0.85	4.90E-04	2041		1825	ei havaint.



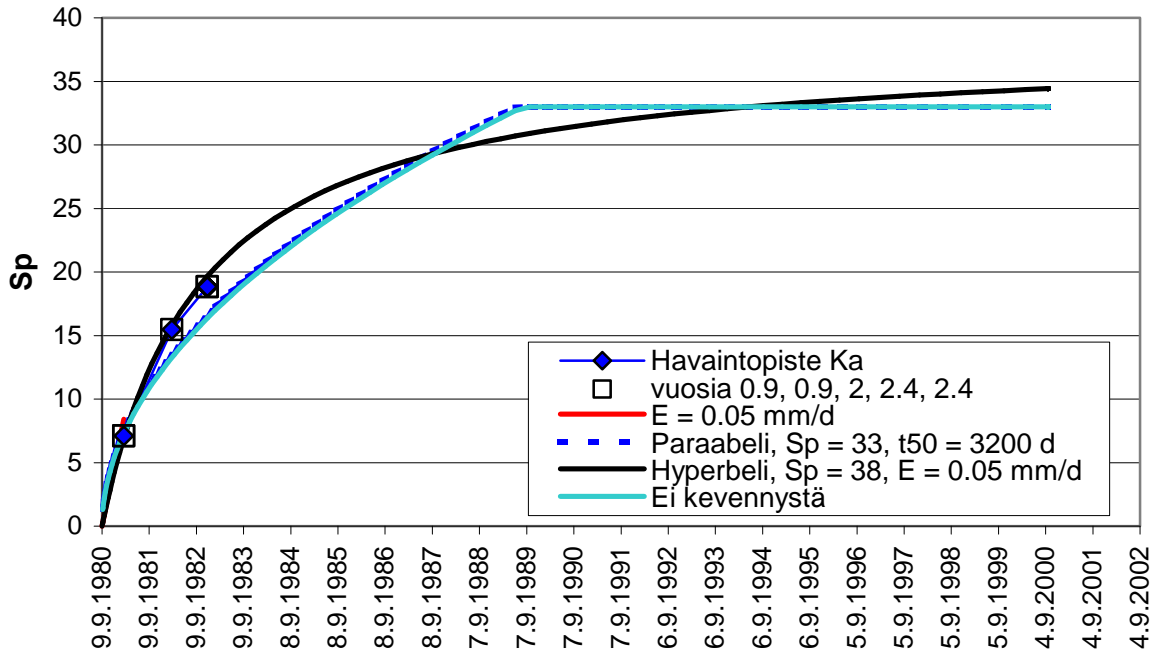
Aika-Painuma kuvaaja



Itäkeskuksen päiväkotii, 2,5 v

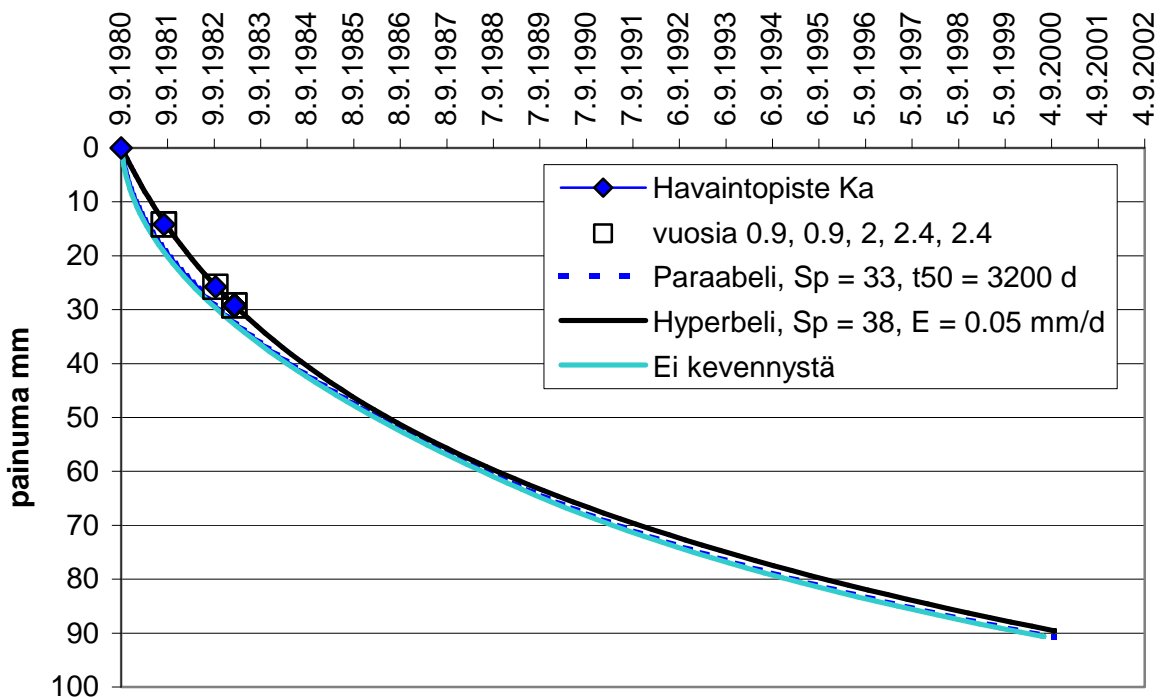
Havaintopiste Ka ▼

○ 1-puol. kl.	H	w	m (b = 0)	m	alkupai.	t0 (d)	pain. t (a)	tod. t
● 2-puol. kl.	6	80	6.7...11.4	8	0	5	20	20
input				80				
	Sp	t50/E	rs	B	c _v	pain. 20	virh. mm	
Paraabeli	33	3200	182	0.044	0.2	91	ei havaint.	
Hyperbeli	38	0.05	158	0.051		89	ei havaint.	

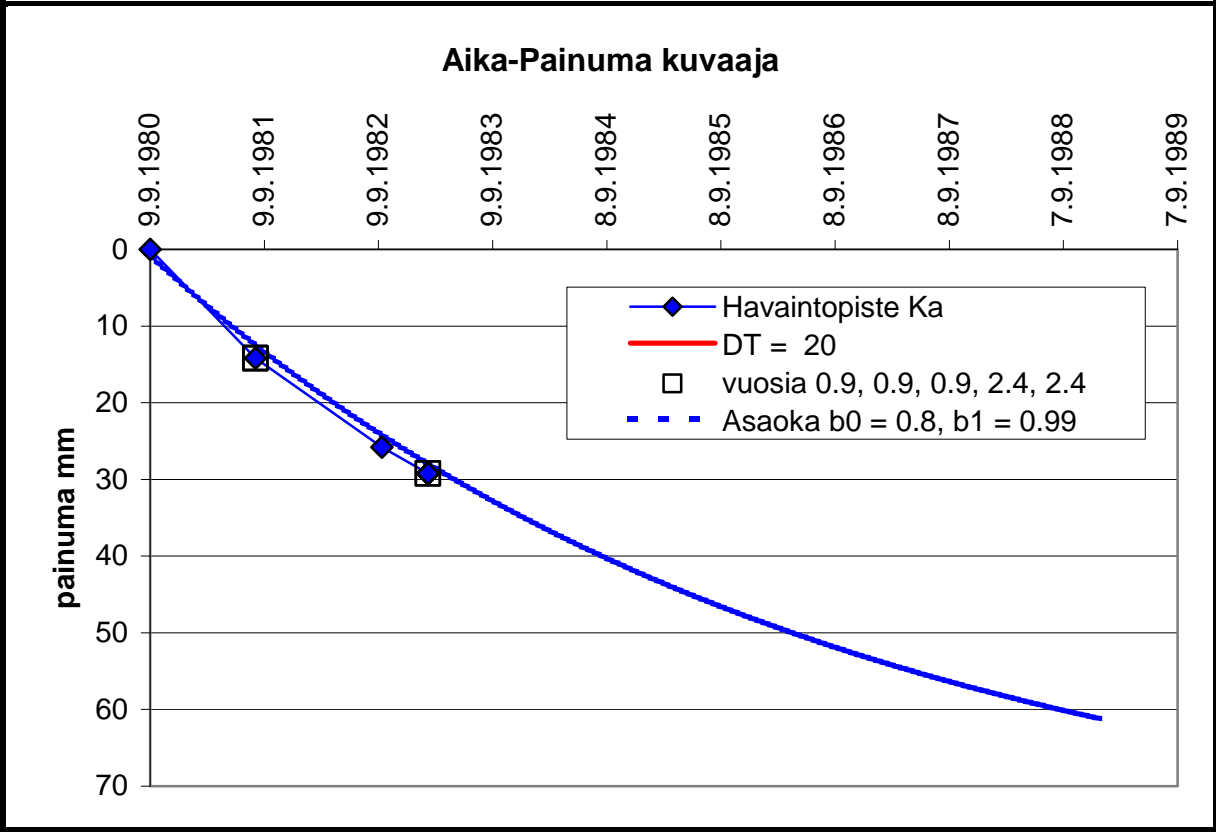
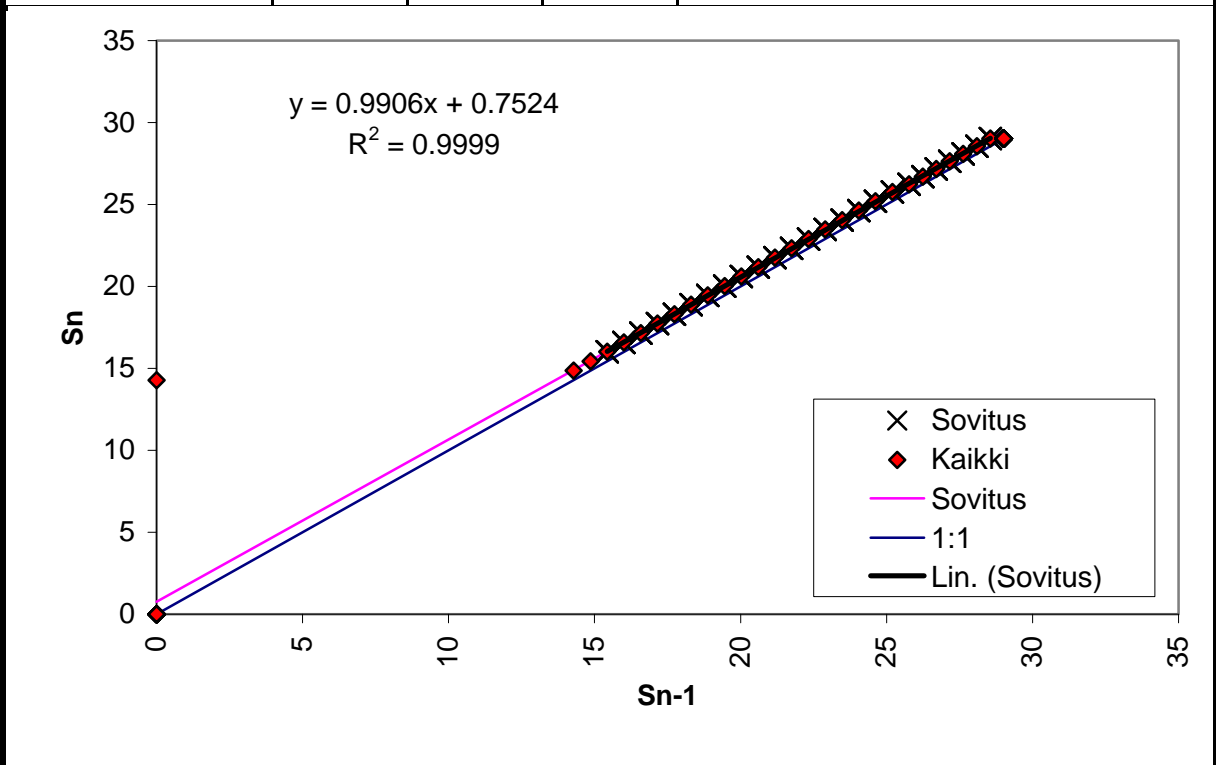


Aika-Painumapotentiaali kuvaaja

Aika-Painuma kuvaaja



				pain. t (a)	tod. t	
				20	20	
input			output			
	β_0	β_1	t	Prim. Pain.	pain20	virh. mm
Asaoka	0.8	0.991	20.00	80	78	ei havaint.
	0.8	0.991	20.00			





pain. t (a)

tod. t

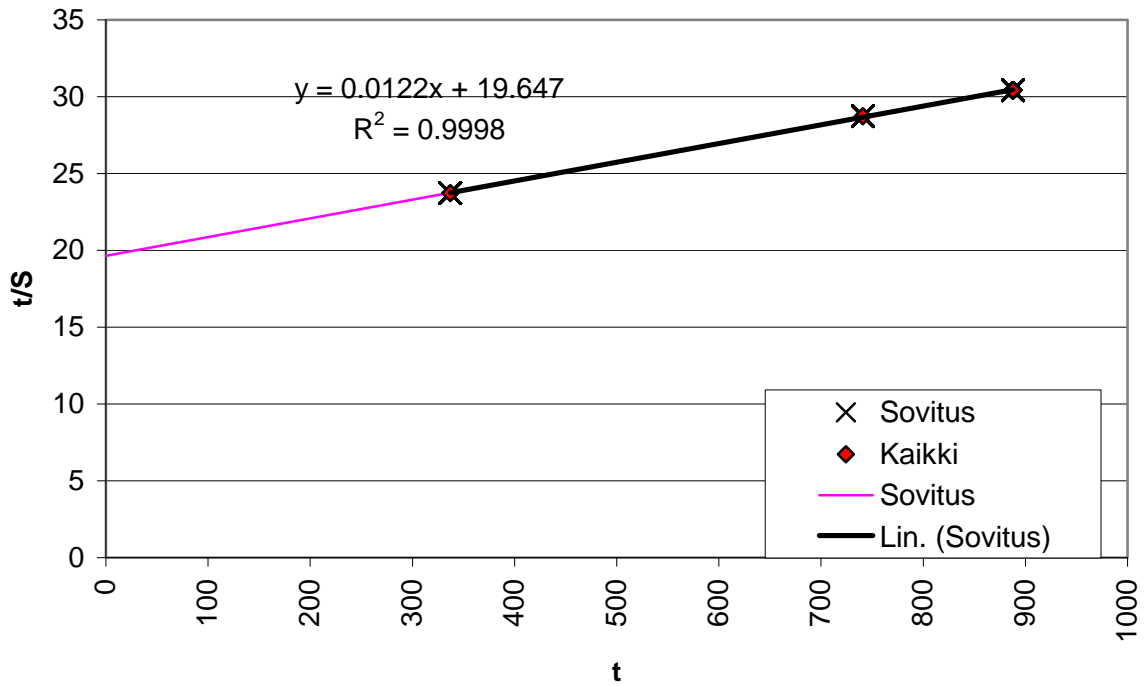
20

20

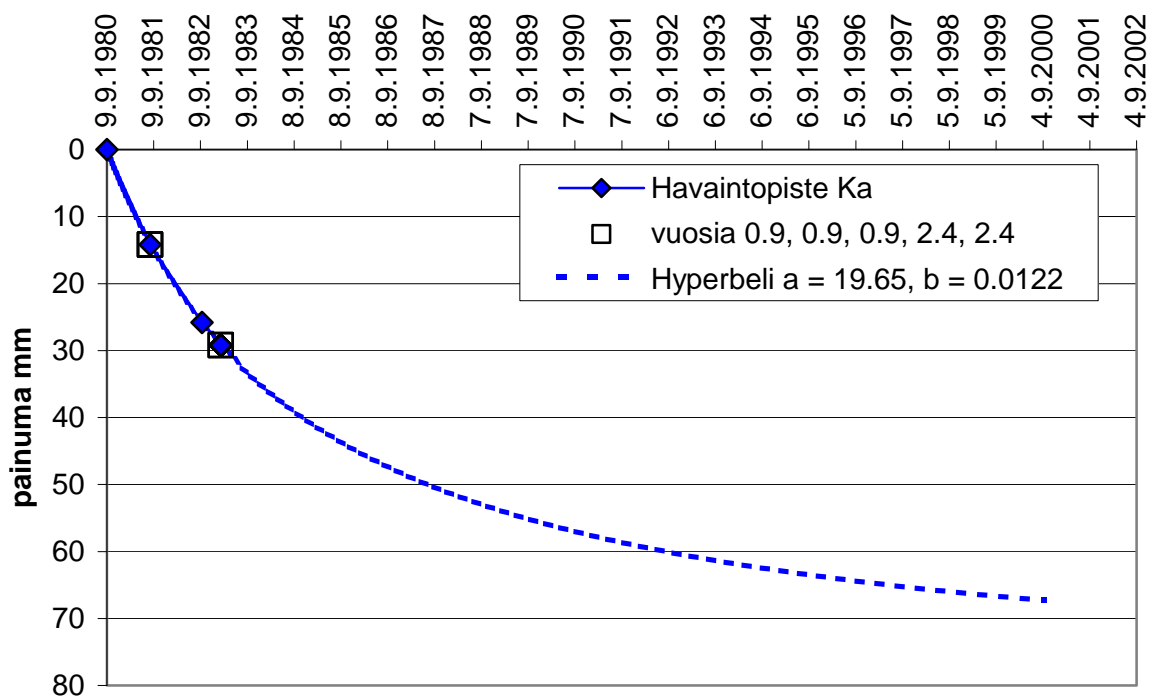
input

output

	a	b	Painuma	pain20	virh. mm
Hyperbeli	19.65	1.22E-02	82	67	ei havaint.



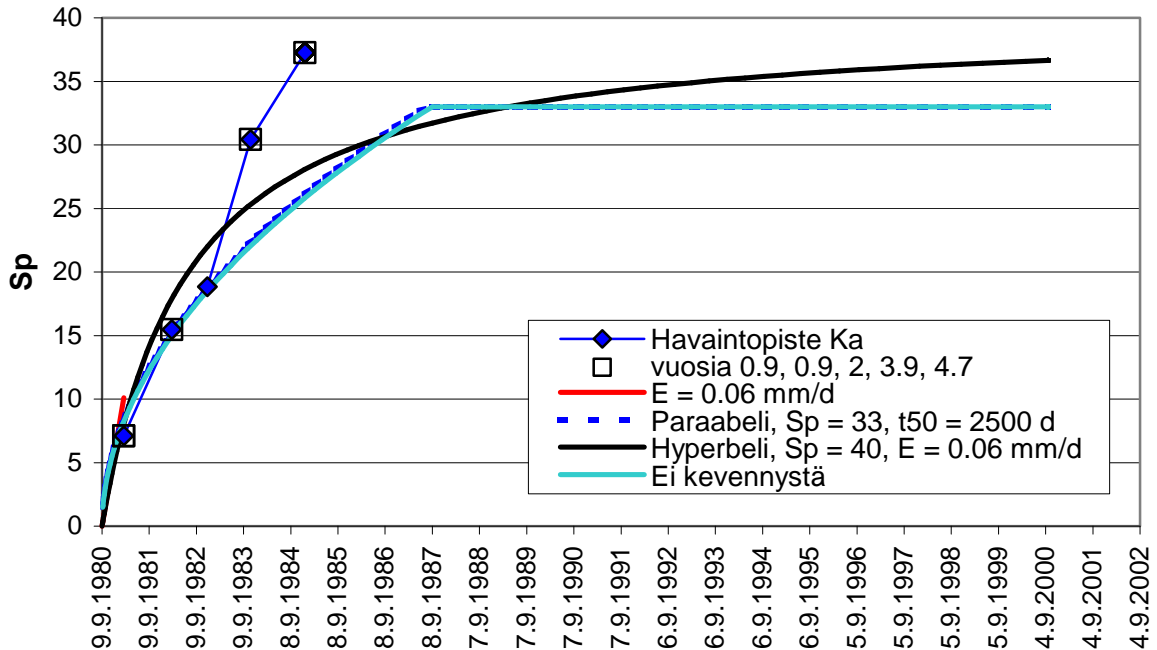
Aika-Painuma kuvaaja



Itäkeskuksen päiväkoti, 5 v

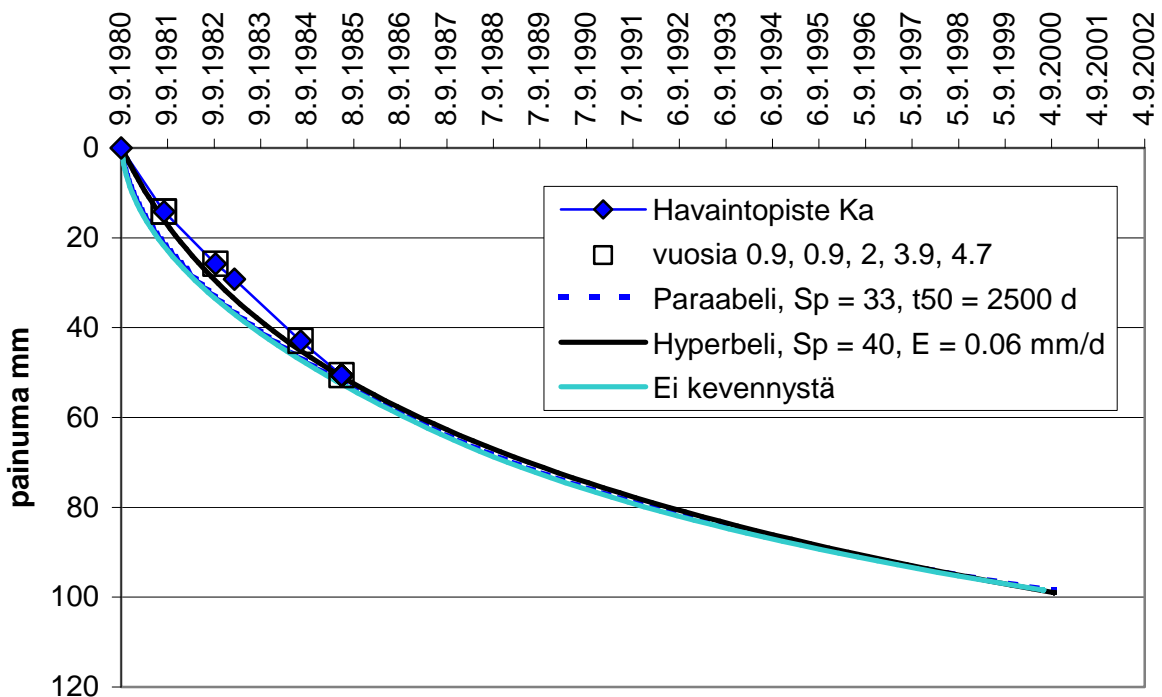
Havaintopiste Ka ▼

○ 1-puol. kl	H	w	m (b = 0)	m	alkupai.	t0 (d)	pain. t (a)	tod. t
● 2-puol. kl	6	80	6.7...11.4	8	0	5	20	20
input				80				
	Sp	t50/E	rs	B	c _v	pain. 20	virh. mm	
Paraabeli	33	2500	182	0.044	0.3	98	ei havaint.	
Hyperbeli	40	0.06	150	0.053		99	ei havaint.	



Aika-Painumapotentiaali kuvaaja

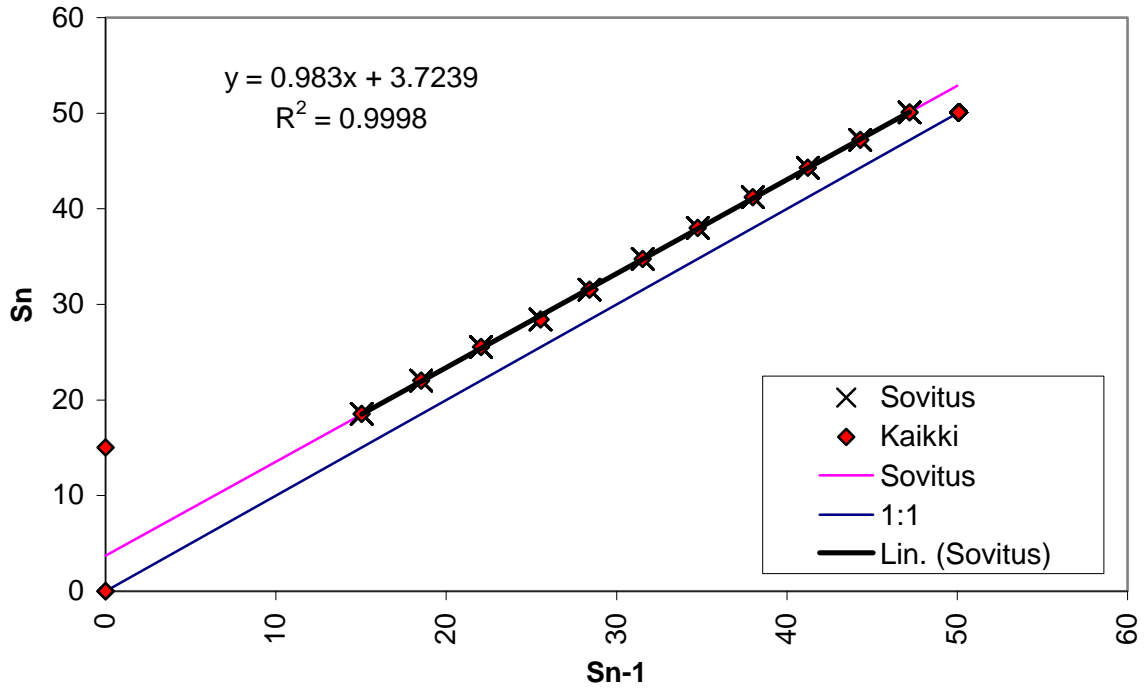
Aika-Painuma kuvaaja



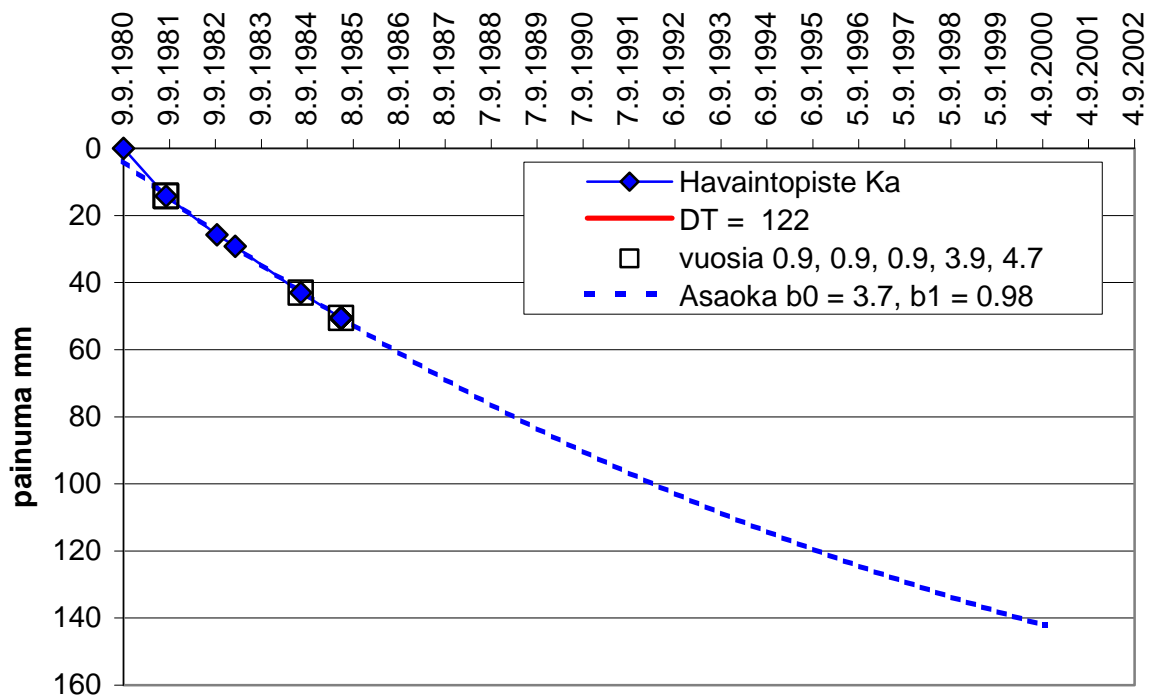


pain. t (a)	tod. t
20	20.1

input				output			
	β_0	β_1	t	Prim. Pain.		pain20.1	virh. mm
Asaoka	3.7	0.983	122.00	219		142	ei havaint.
	3.7	0.983	122.00				



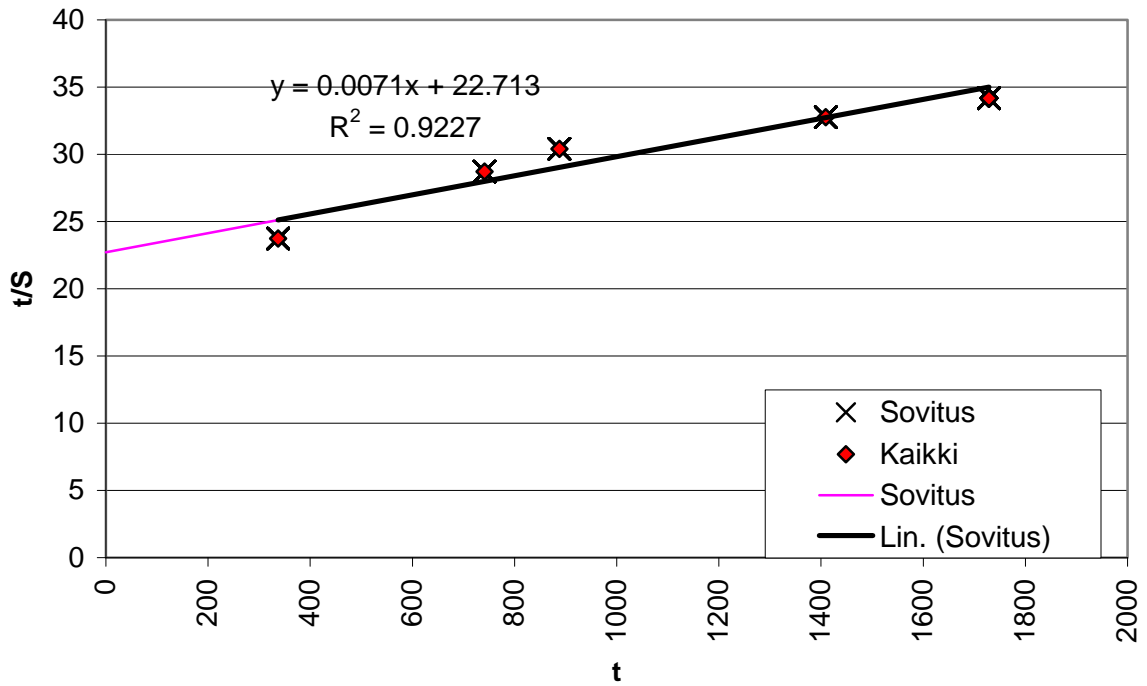
Aika-Painuma kuvaaja



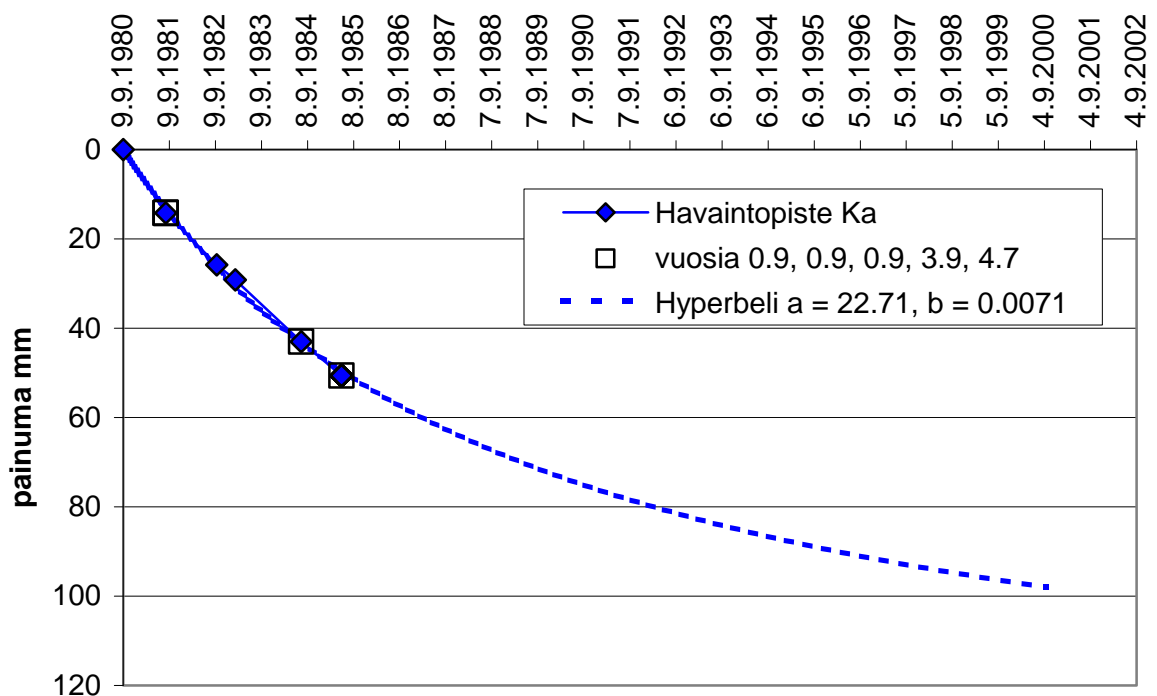


pain. t (a)	tod. t
20	20

input			output			
	a	b	Painuma		pain20	virh. mm
Hyperbeli	22.71	7.11E-03	141		98	ei havaint.



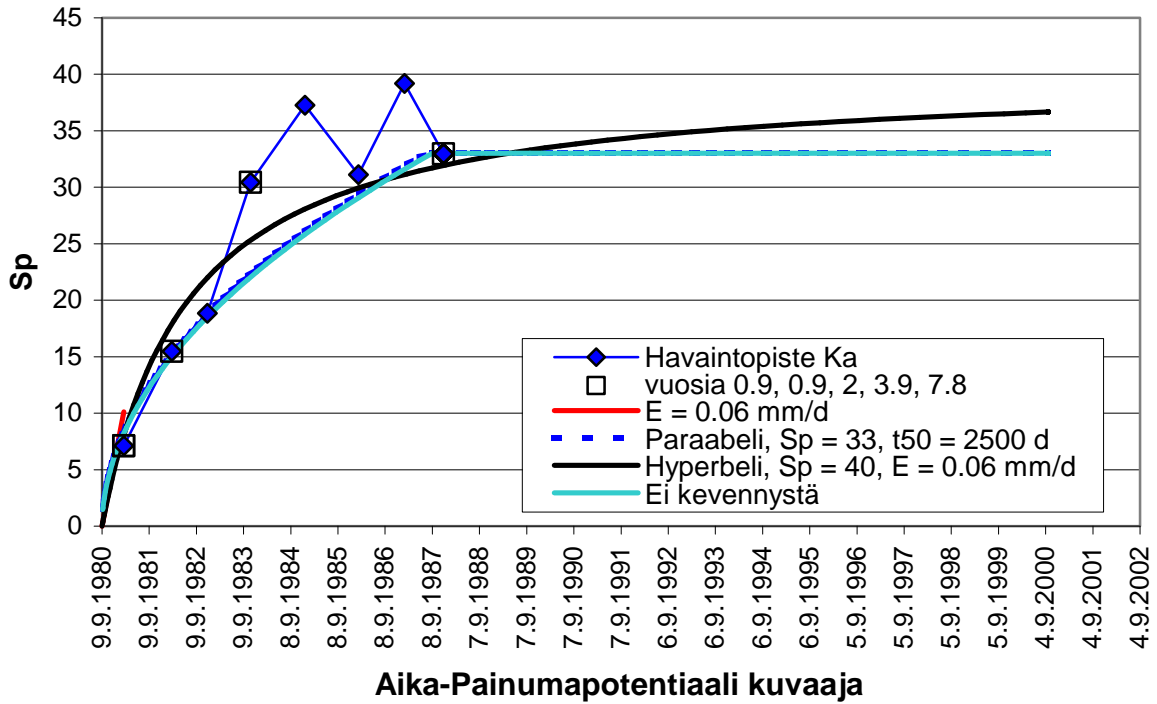
Aika-Painuma kuvaaja



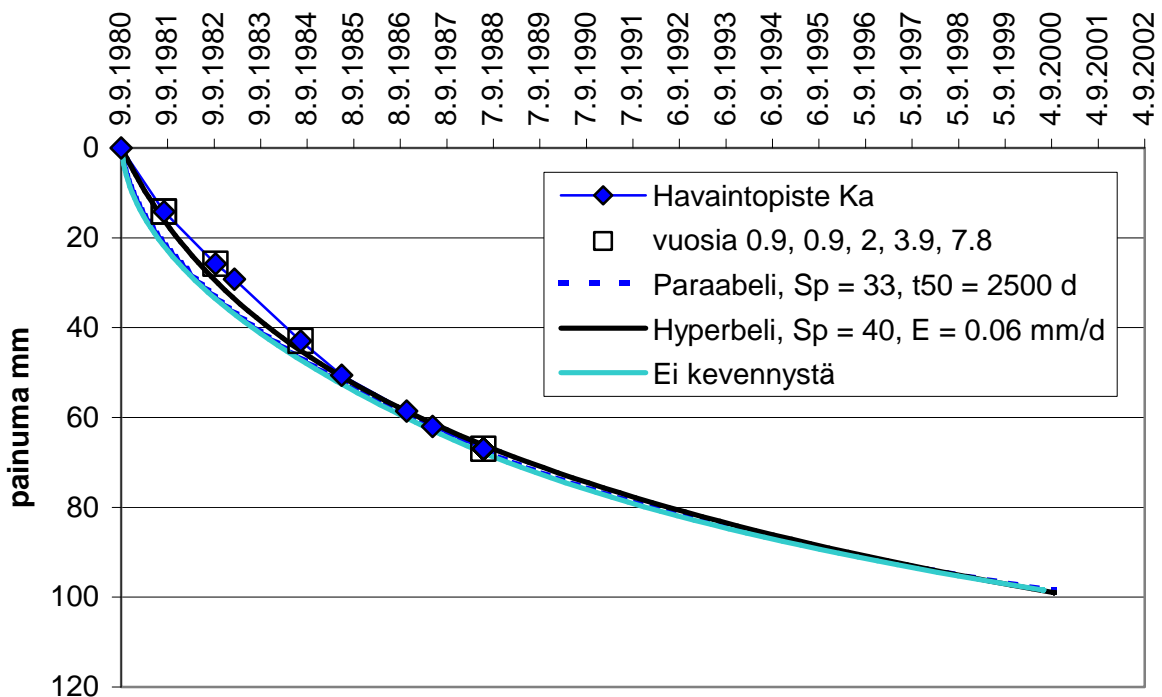
Itäkeskuksen päiväkoti, 8 v

Havaintopiste Ka ▼

○ 1-puol. kl	H	w	m (b = 0)	m	alkupai.	t0 (d)	pain. t (a)	tod. t
● 2-puol. kl	6	80	6.7...11.4	8	0	5	20	20
input				80				
	Sp	t50/E	rs	B	c _v	pain. 20	virh. mm	
Paraabeli	33	2500	182	0.044	0.3	98	ei havaint.	
Hyperbeli	40	0.06	150	0.053		99	ei havaint.	



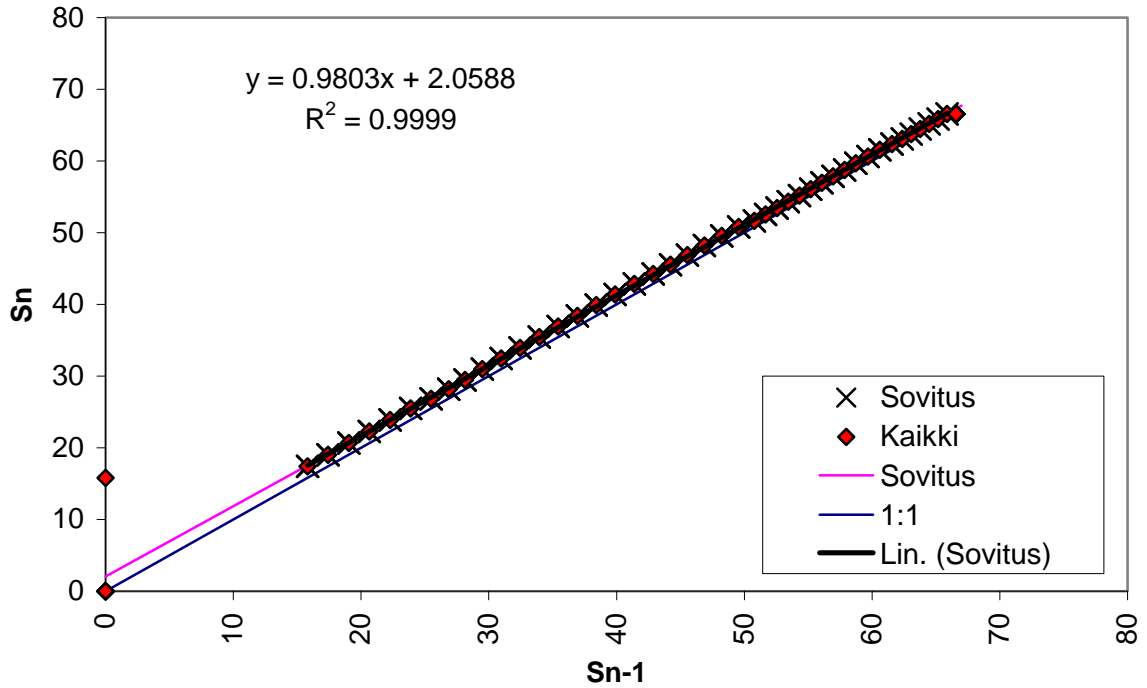
Aika-Painuma kuvaaja



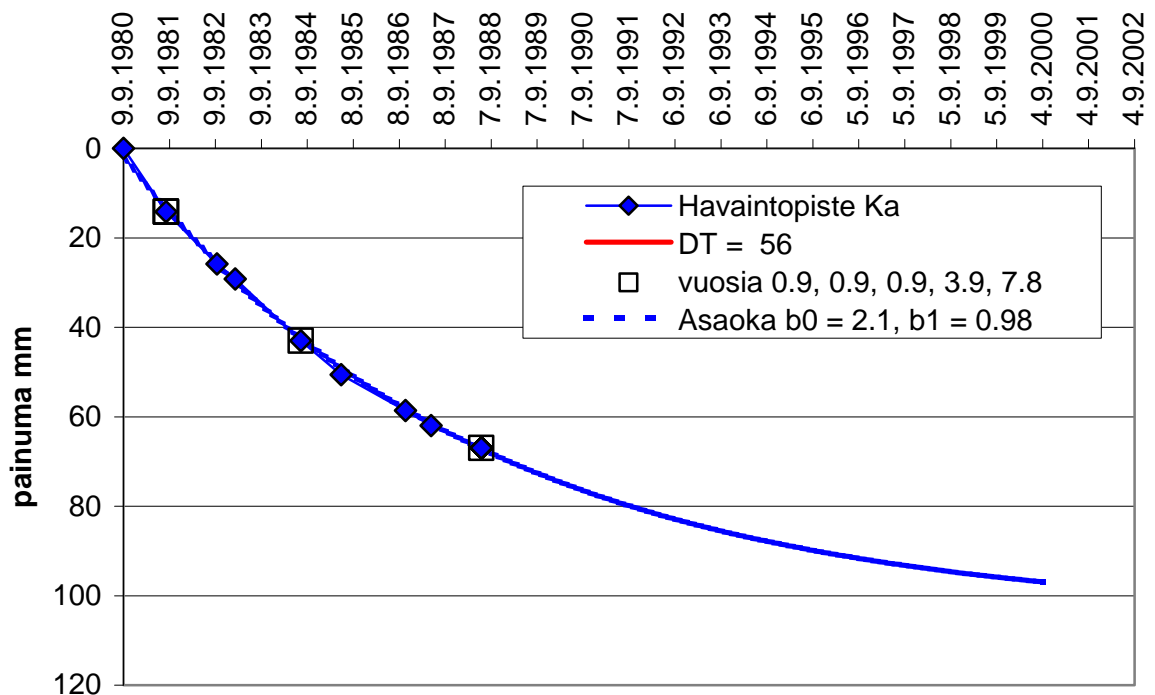


pain. t (a)	tod. t
20	20

input				output			
	β_0	β_1	t	Prim. Pain.		pain20	virh. mm
Asaoka	2.1	0.980	56.17	105		97	ei havaint.
	2.1	0.980	56.17				



Aika-Painuma kuvaaja





pain. t (a)

tod. t

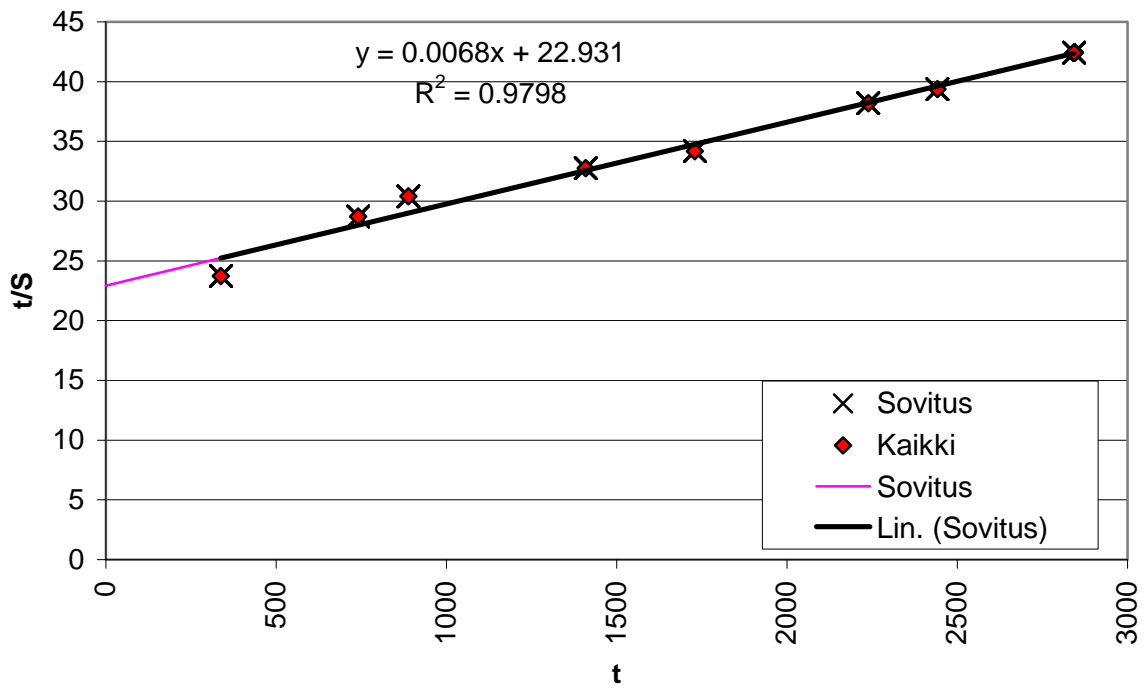
20

20

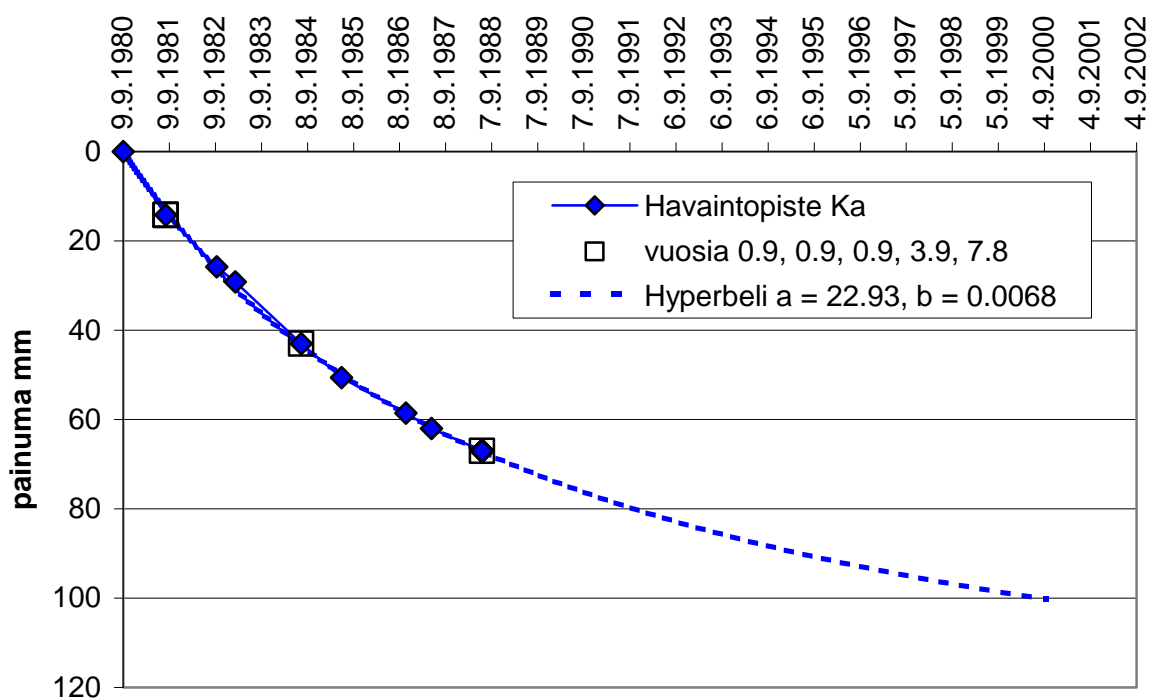
input

output

	a	b	Painuma		pain20	virh. mm
Hyperbeli	22.93	6.84E-03	146		100	ei havaint.



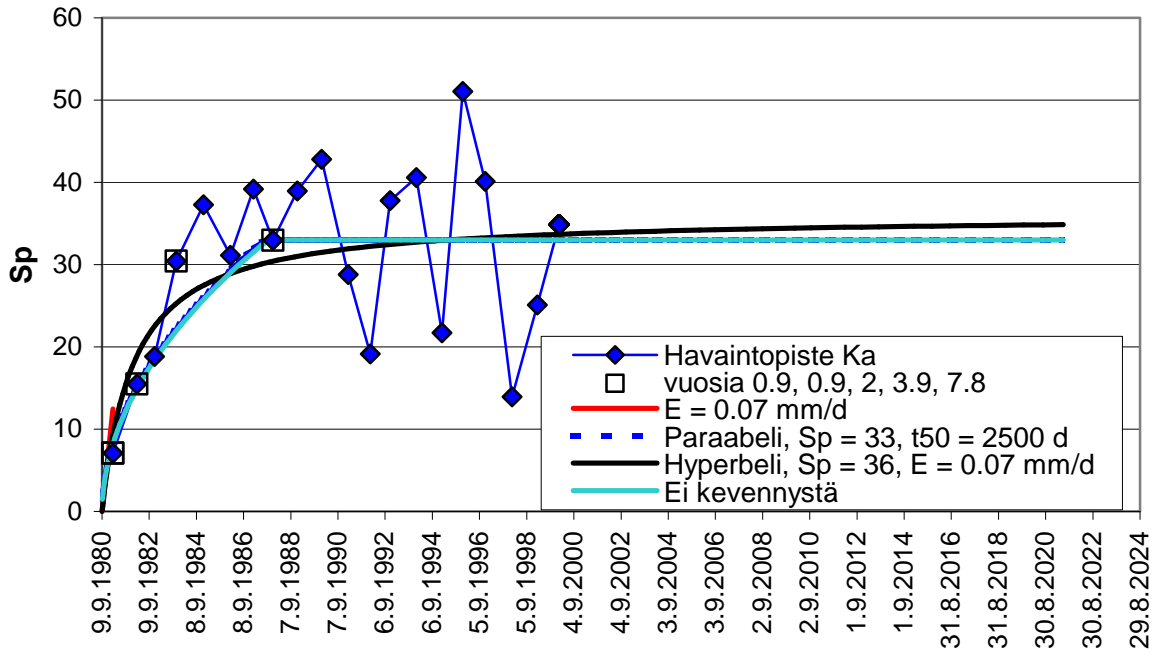
Aika-Painuma kuvaaja



Itäkeskuksen päiväkoti, 20 v

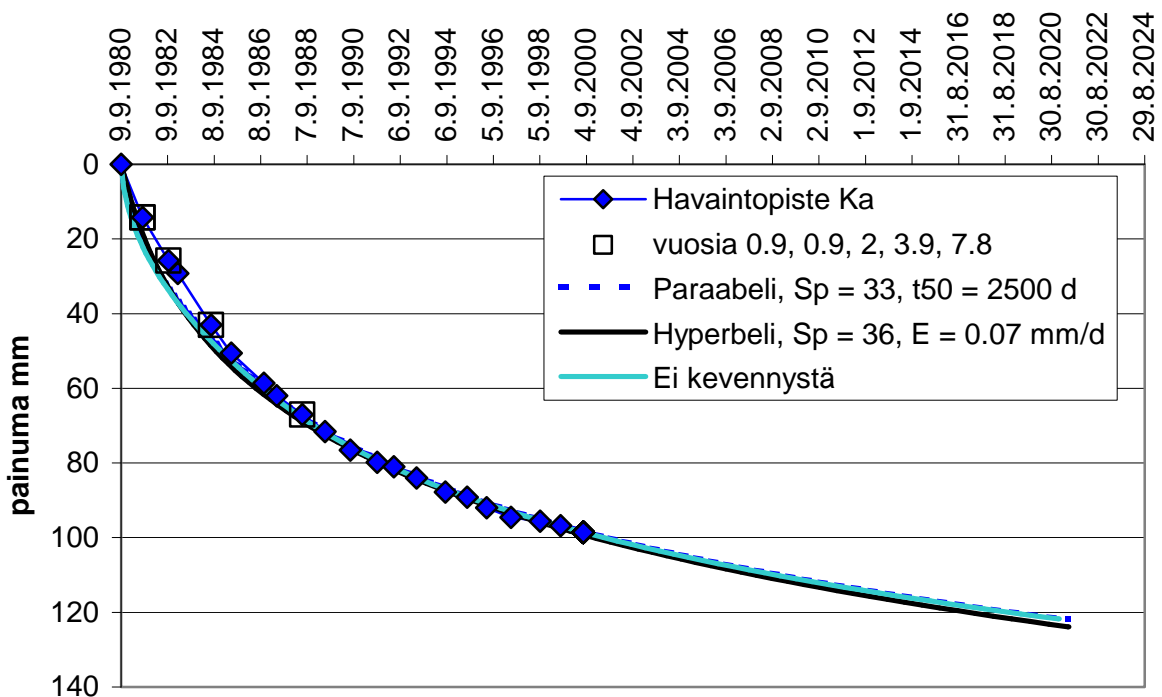
Havaintopiste Ka ▼

○ 1-puol. kl.	H	w	m (b = 0)	m	alkupai.	t0 (d)	pain. t (a)	tod. t
● 2-puol. kl.	6	80	6.7...11.4	8	0	5	40	40
input				80				
	Sp	t50/E	rs	B	c _v	pain. 40	virh. mm	
Paraabeli	33	2500	182	0.044	0.3	121	ei havaint.	
Hyperbeli	36	0.07	167	0.048		123	ei havaint.	



Aika-Painumapotentialiaali kuvaaja

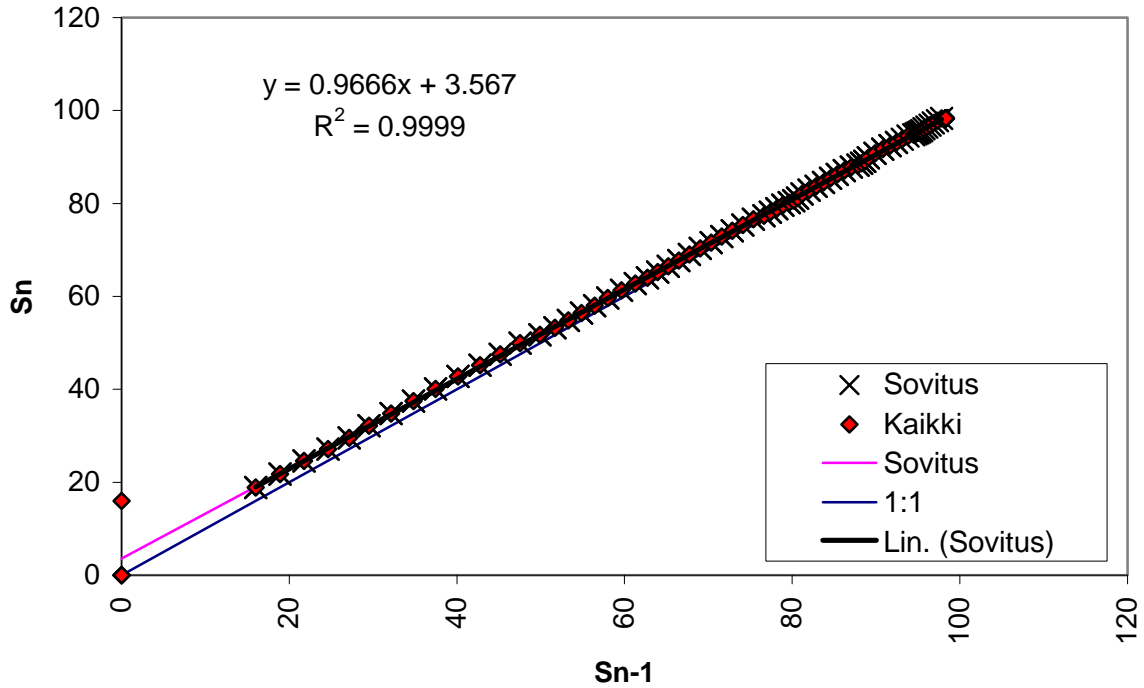
Aika-Painuma kuvaaja



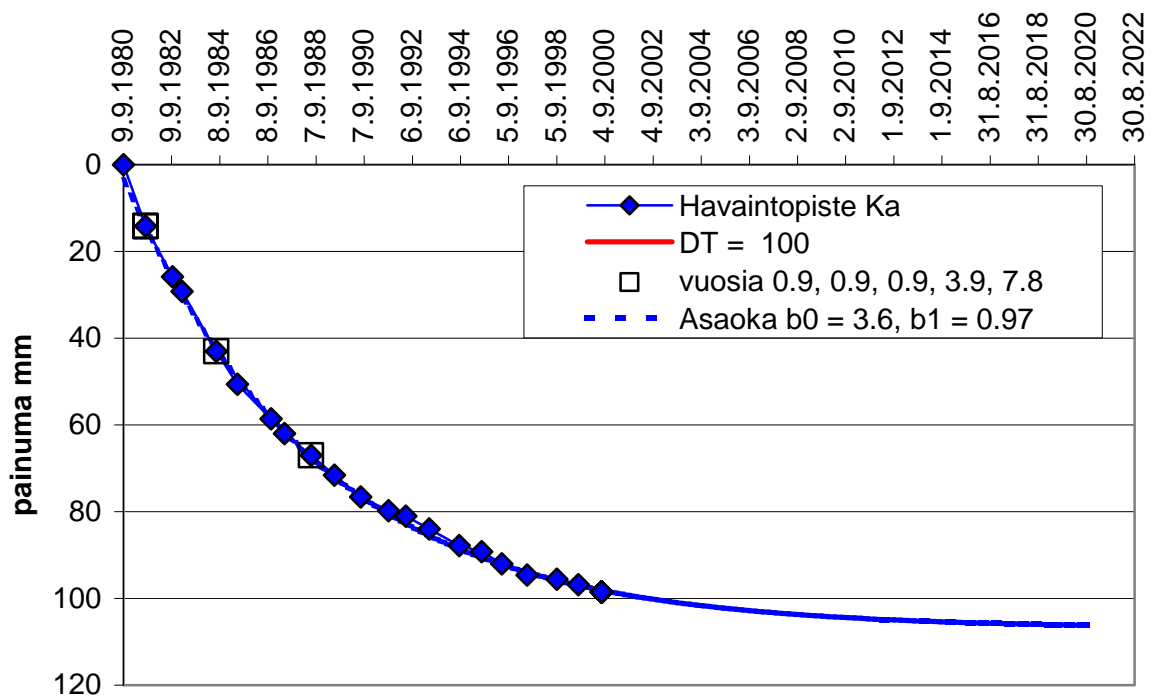


pain. t (a)	tod. t
40	40

input				output			
	β_0	β_1	t	Prim. Pain.		pain40	virh. mm
Asaoka	3.6	0.967	100.00	107		106	ei havaint.
	3.6	0.967	100.00				



Aika-Painuma kuvaaja





pain. t (a)

tod. t

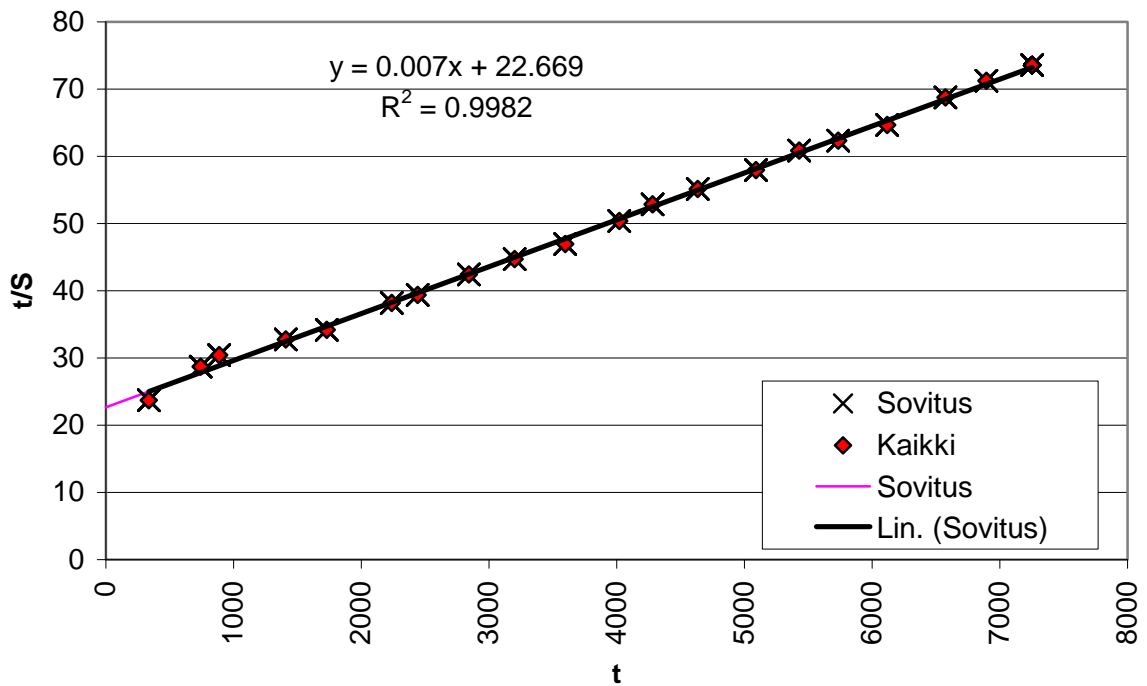
40

40

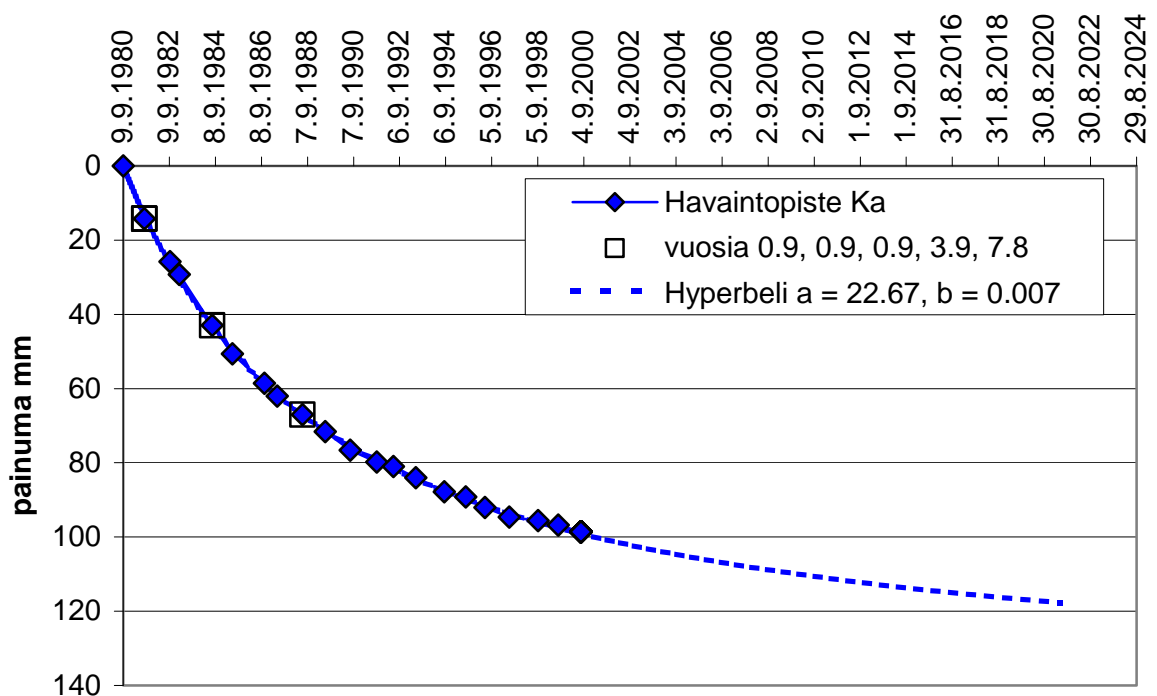
input

output

	a	b	Painuma	pain40	virh. mm
Hyperbeli	22.67	6.97E-03	143	117	ei havaint.



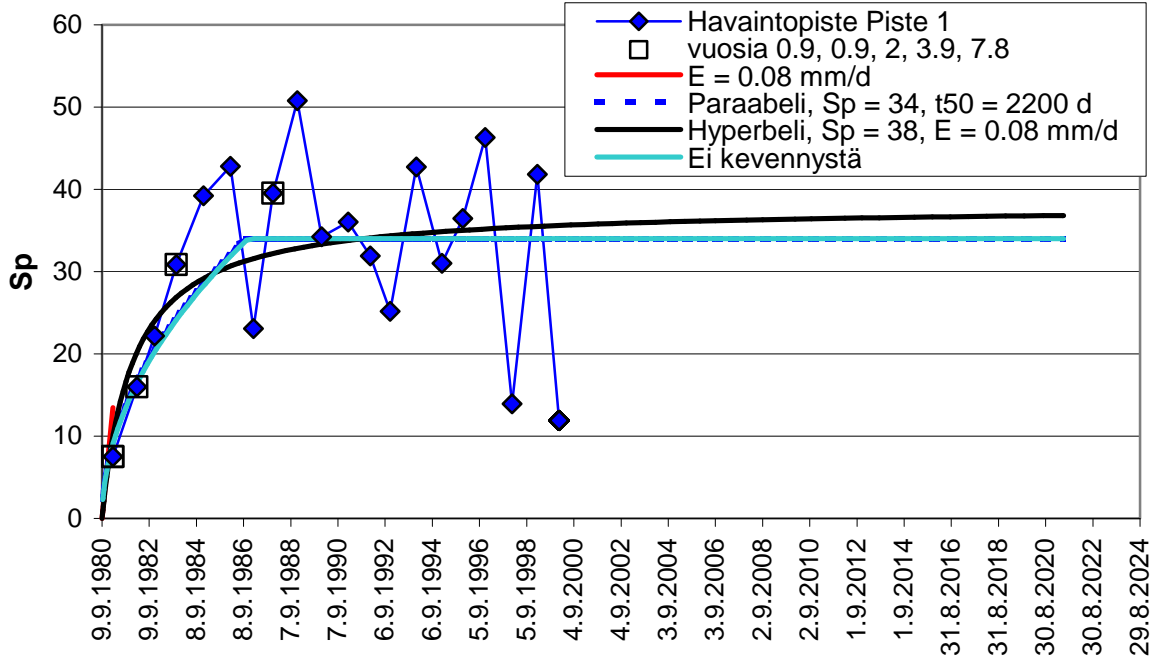
Aika-Painuma kuvaaja



Itäkeskuksen päiväkoti, 20 v

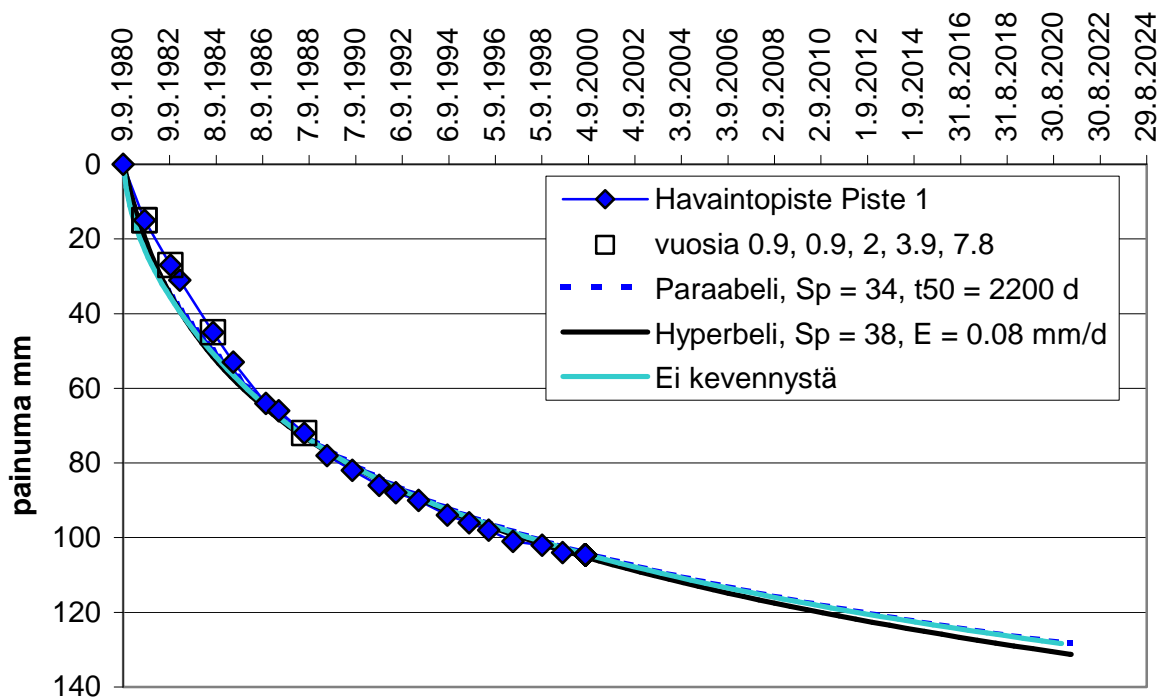
Havaintopiste Piste 1

○ 1-puol. kl	H	w	m (b = 0)	m	alkupai.	t0 (d)	pain. t (a)	tod. t
● 2-puol. kl	6	80	6.7...11.4	8	0	10	40	40
input				80				
	Sp	t50/E	rs	B	c _v	pain. 40	virh. mm	
Paraabeli	34	2200	176	0.045	0.3	128	ei havaint.	
Hyperbeli	38	0.08	158	0.051		131	ei havaint.	

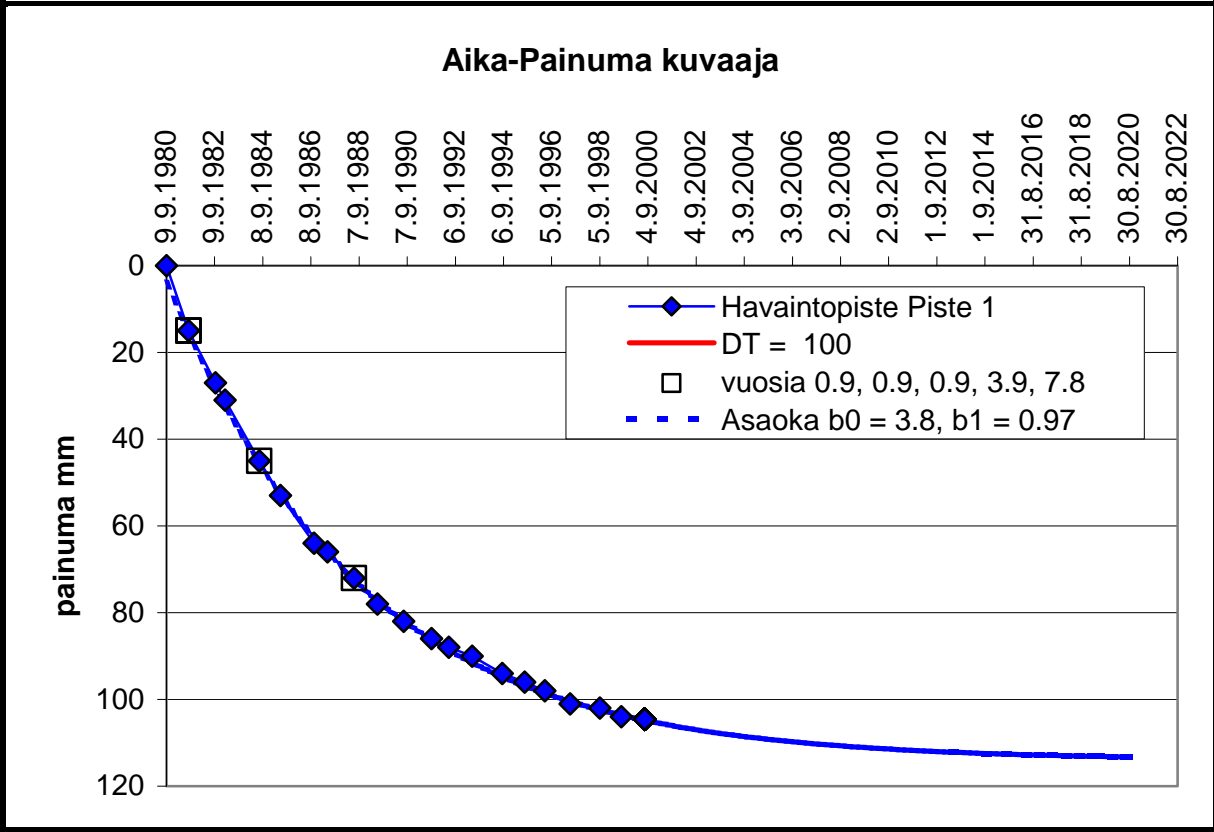
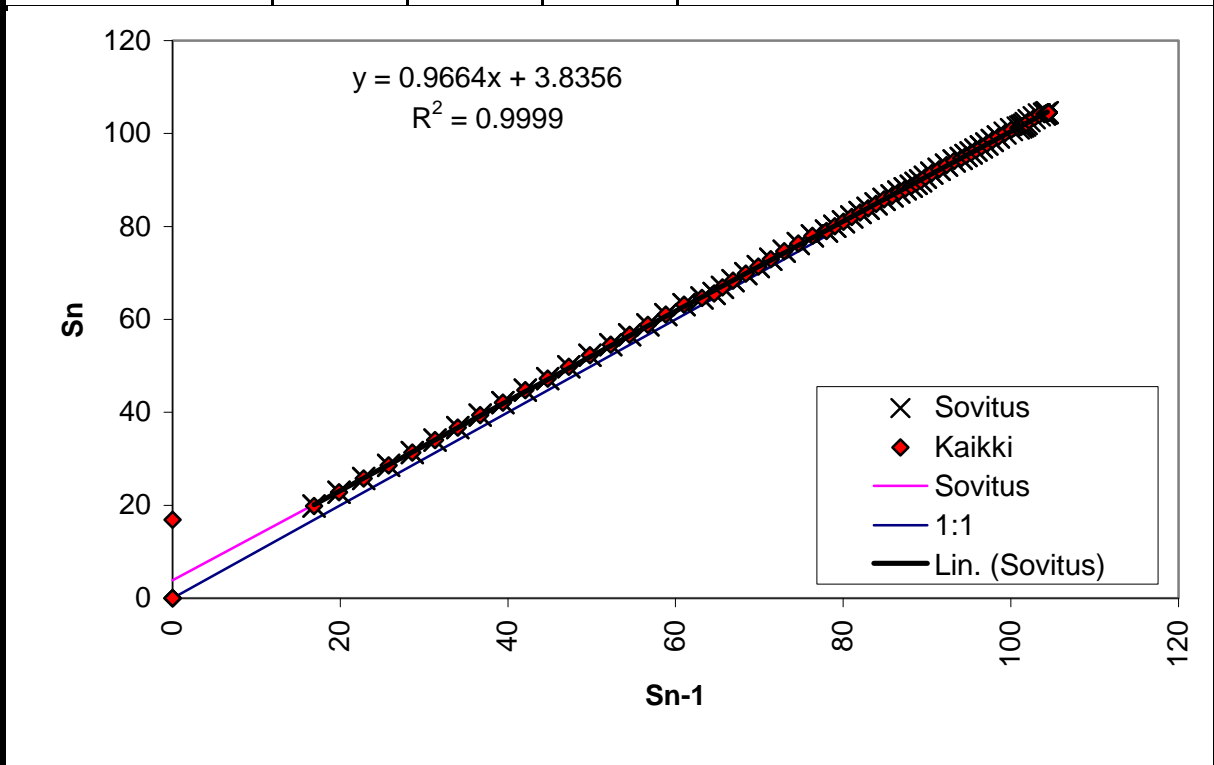


Aika-Painumapotentialiaali kuvaaja

Aika-Painuma kuvaaja



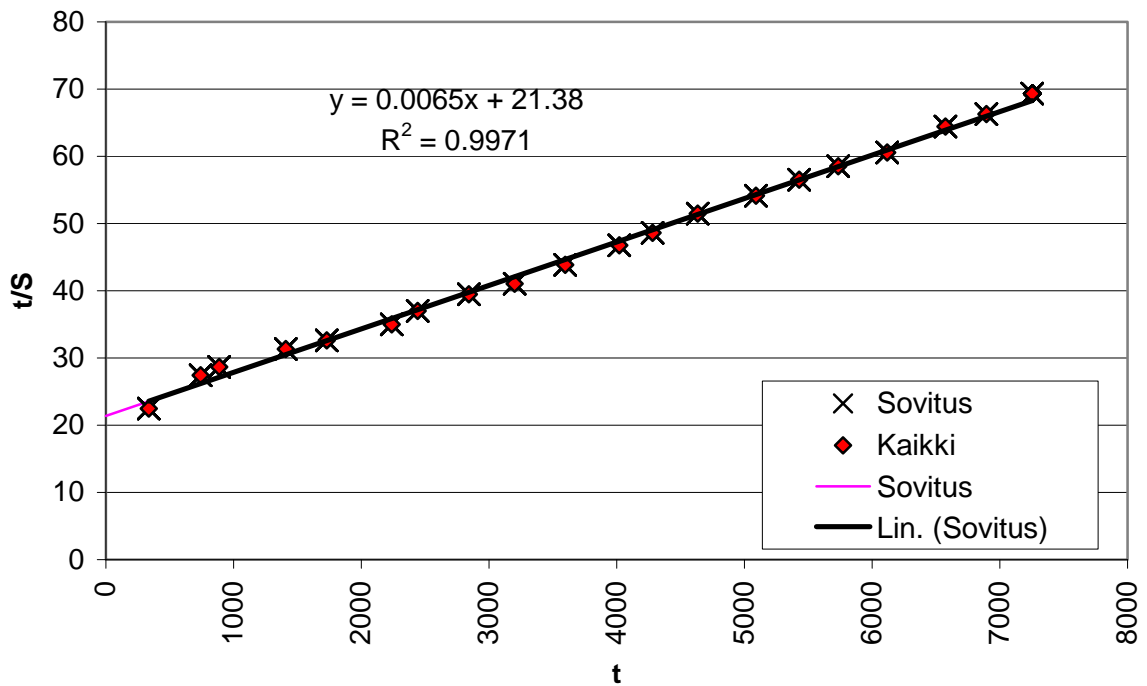
				pain. t (a)	tod. t
				40	40
input			output		
	β_0	β_1	t	Prim. Pain.	virh. mm
Asaoka	3.8	0.966	100.00	114	ei havaint.
	3.8	0.966	100.00		



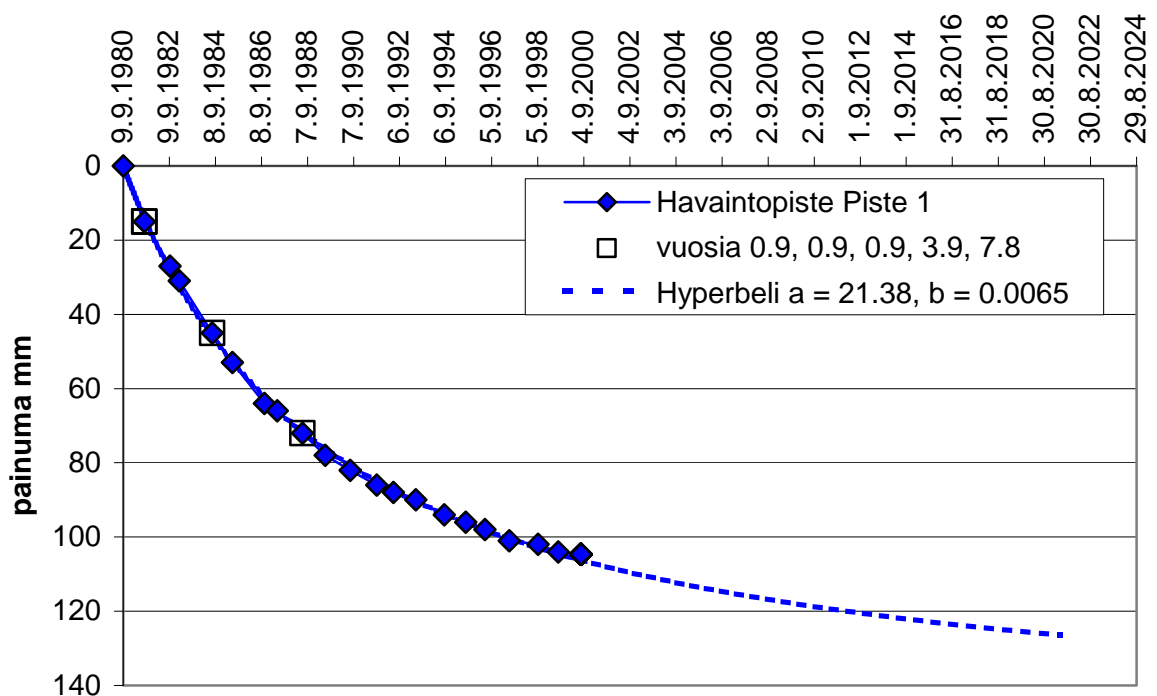


pain. t (a)	tod. t
40	40

input			output			
	a	b	Painuma		pain40	virh. mm
Hyperbeli	21.38	6.47E-03	155		126	ei havaint.



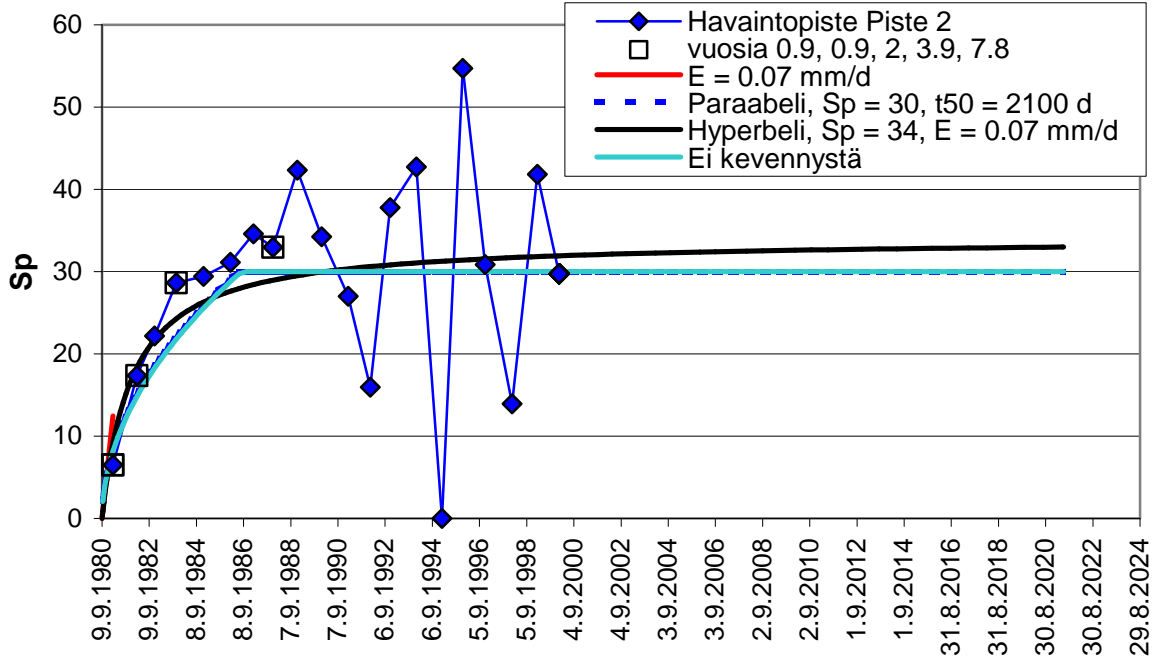
Aika-Painuma kuvaaja



Itäkeskuksen päiväkoti, 20 v

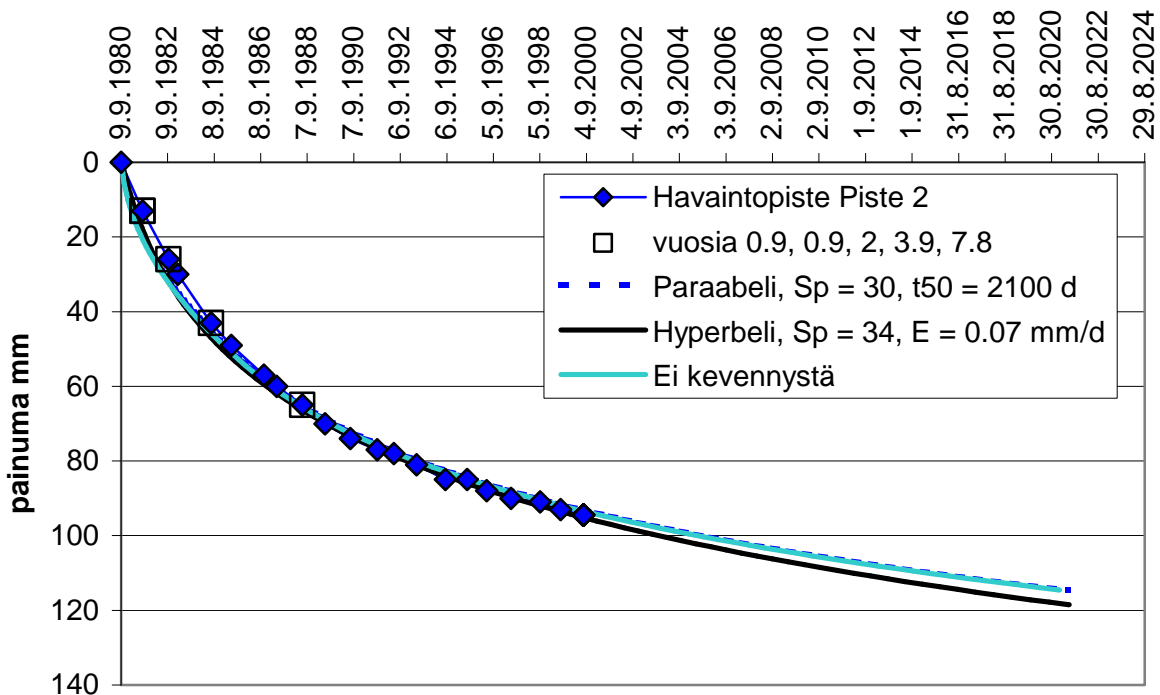
Havaintopiste Piste 2

○ 1-puol. kl	H	w	m (b = 0)	m	alkupai.	t0 (d)	pain. t (a)	tod. t
● 2-puol. kl	6	80	6.7...11.4	8	0	10	40	40
input				80				
	Sp	t50/E	rs	B	c _v	pain. 40	virh. mm	
Paraabeli	30	2100	200	0.040	0.3	114	ei havaint.	
Hyperbeli	34	0.07	176	0.045		118	ei havaint.	



Aika-Painumapotentiaali kuvaaja

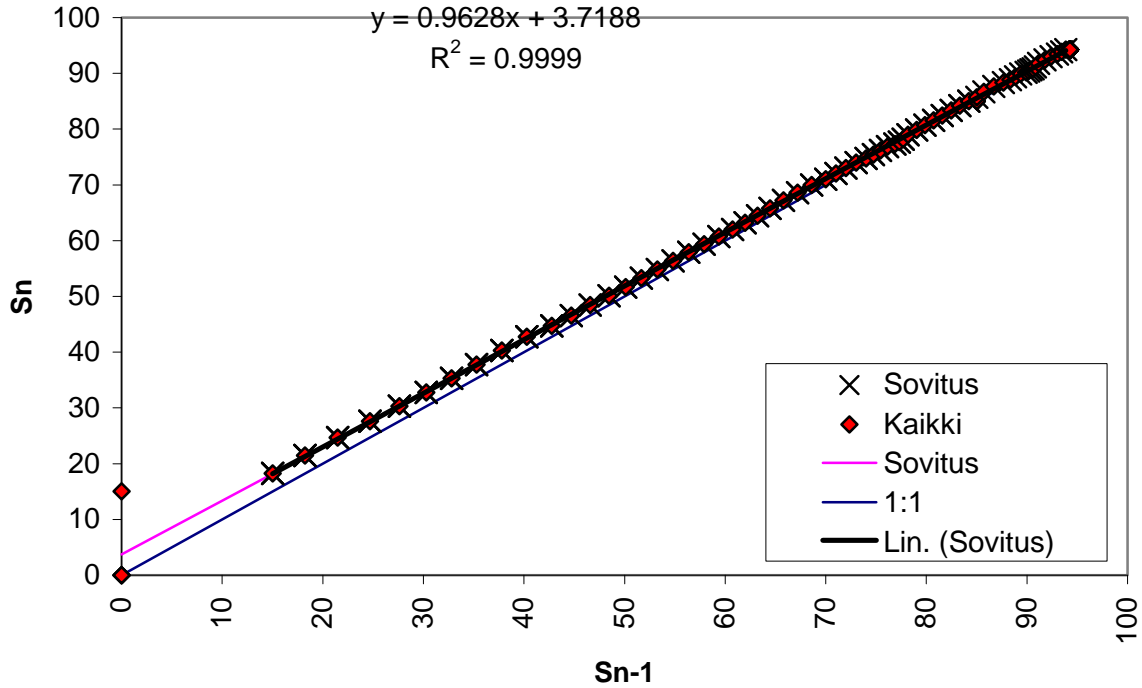
Aika-Painuma kuvaaja



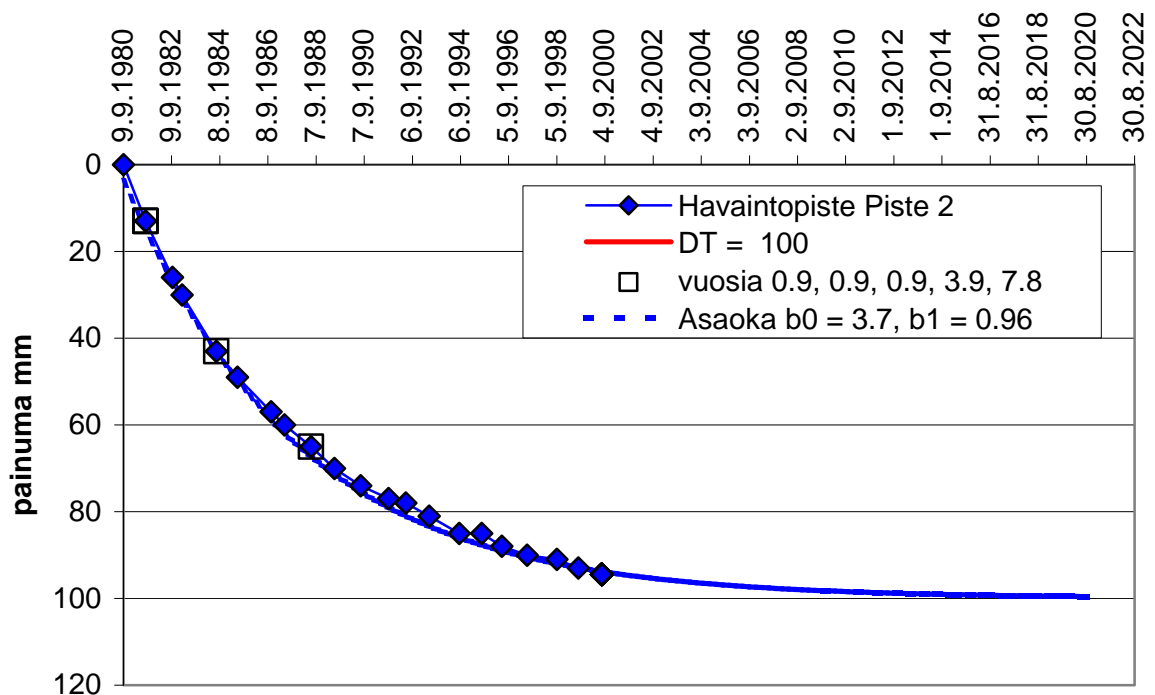


pain. t (a)	tod. t
40	40

input				output			
	β_0	β_1	t	Prim. Pain.		pain40	virh. mm
Asaoka	3.7	0.963	100.00	100		100	ei havaint.
	3.7	0.963	100.00				



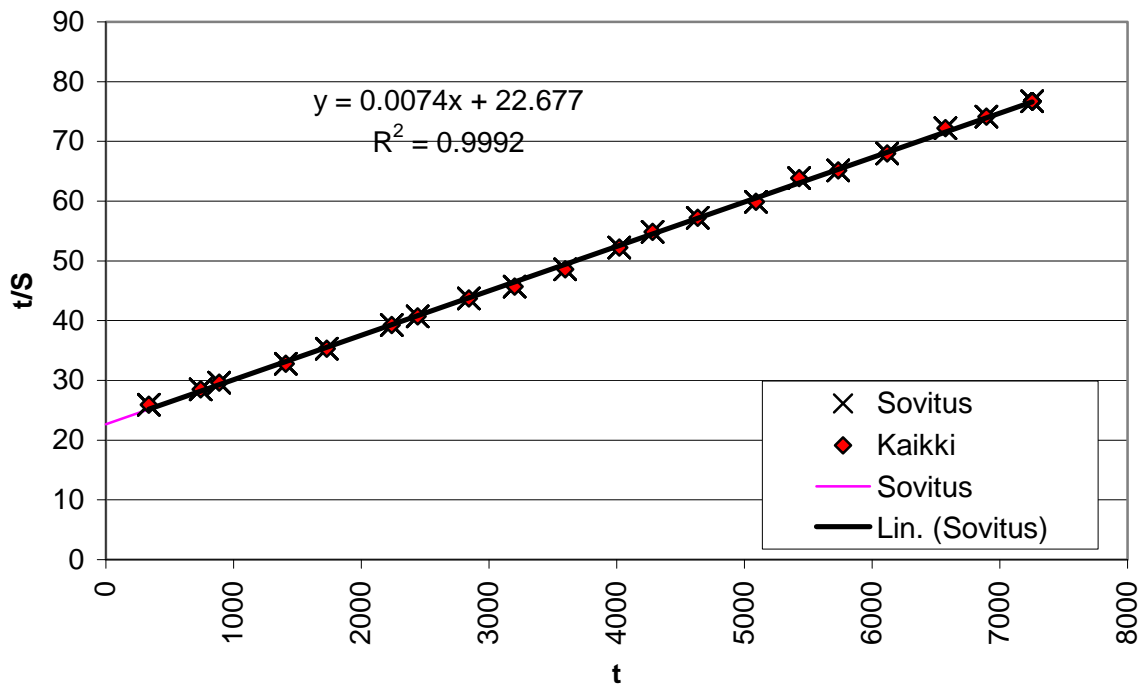
Aika-Painuma kuvaaja



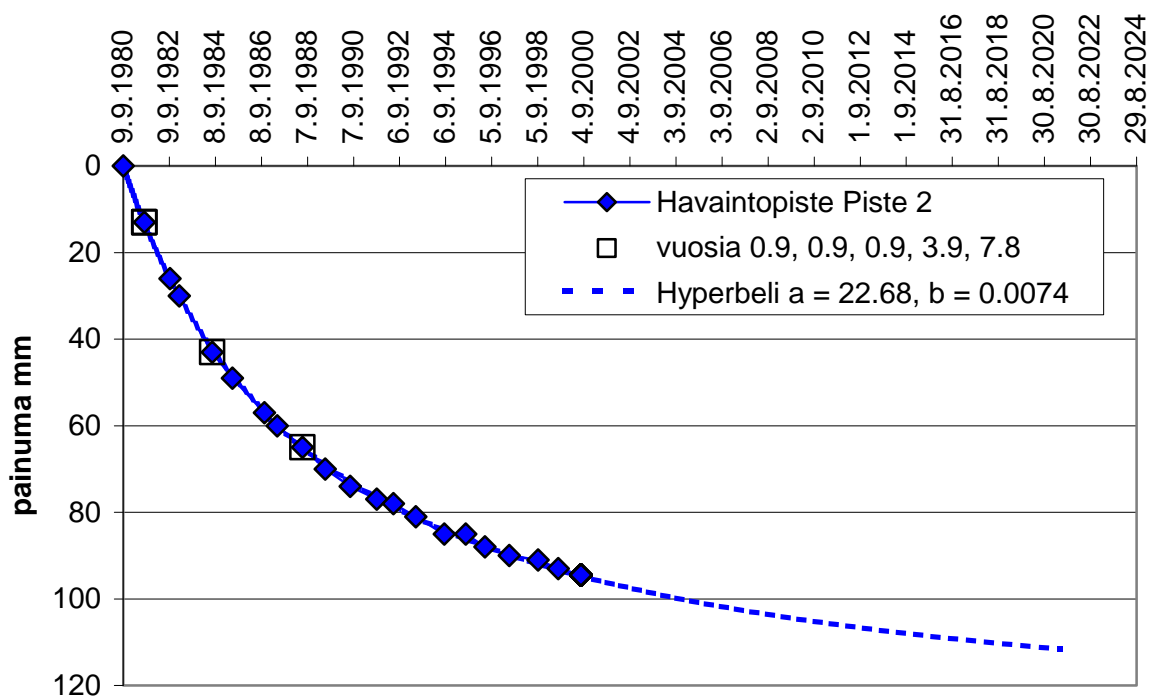


pain. t (a)	tod. t
40	40

input			output			
	a	b	Painuma		pain40	virh. mm
Hyperbeli	22.68	7.44E-03	134		111	ei havaint.



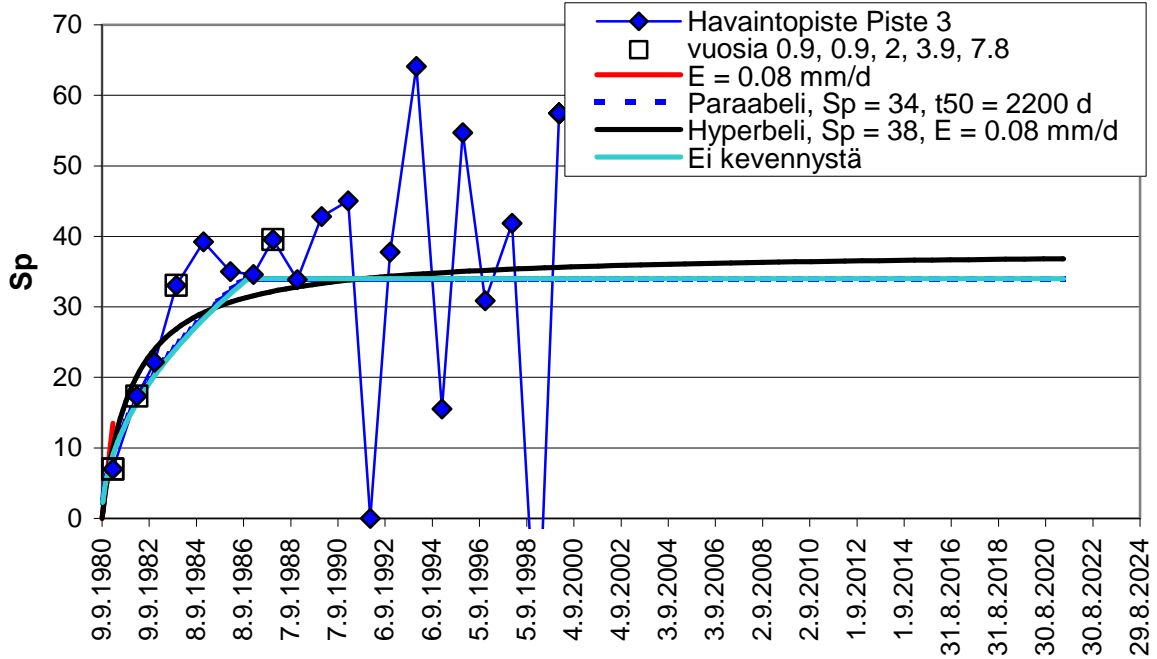
Aika-Painuma kuvaaja



Itäkeskuksen päiväkoti, 20 v

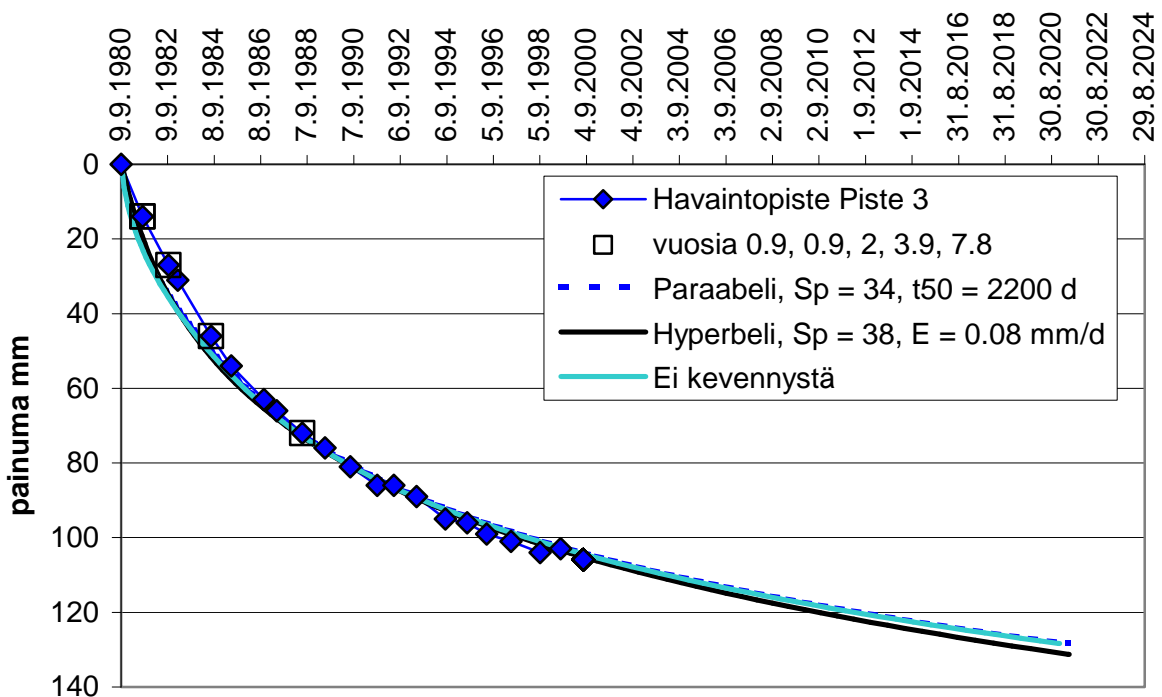
Havaintopiste Piste 3

○ 1-puol. kl	H	w	m (b = 0)	m	alkupai.	t0 (d)	pain. t (a)	tod. t
● 2-puol. kl	6	80	6.7...11.4	8	0	10	40	40
input				80				
	Sp	t50/E	rs	B	c _v	pain. 40	virh. mm	
Paraabeli	34	2200	176	0.045	0.3	128	ei havaint.	
Hyperbeli	38	0.08	158	0.051		131	ei havaint.	



Aika-Painumapotentialiaali kuvaaja

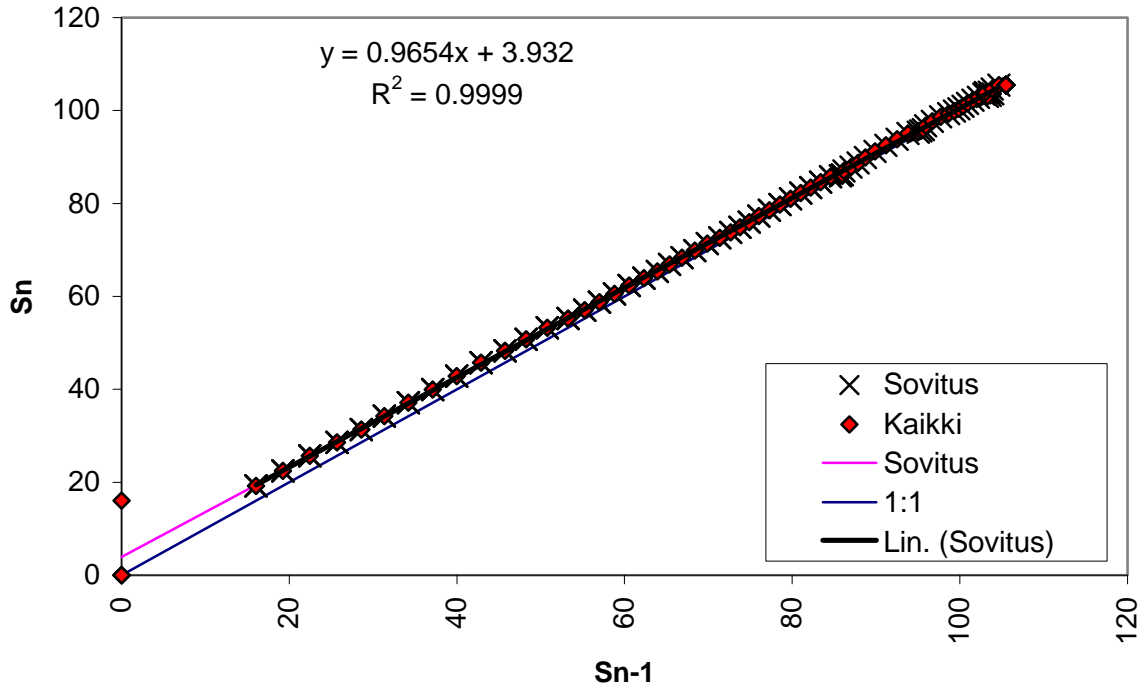
Aika-Painuma kuvaaja



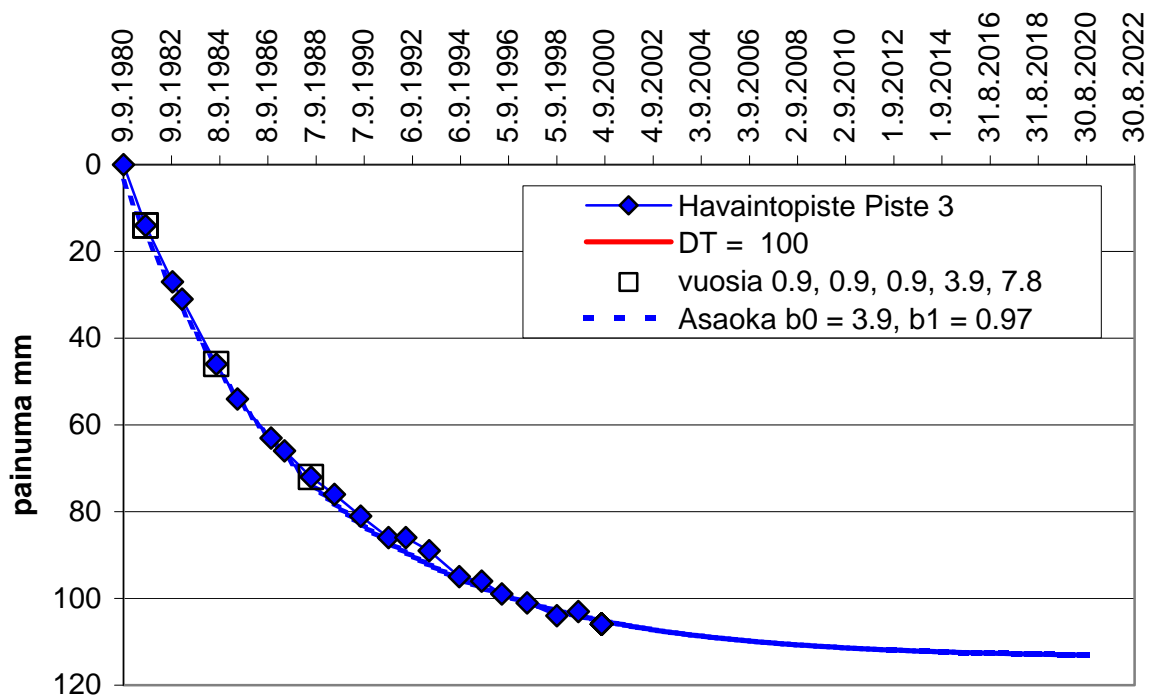


pain. t (a)	tod. t
40	40

input				output			
	β_0	β_1	t	Prim. Pain.		pain40	virh. mm
Asaoka	3.9	0.965	100.00	114		113	ei havaint.
	3.9	0.965	100.00				

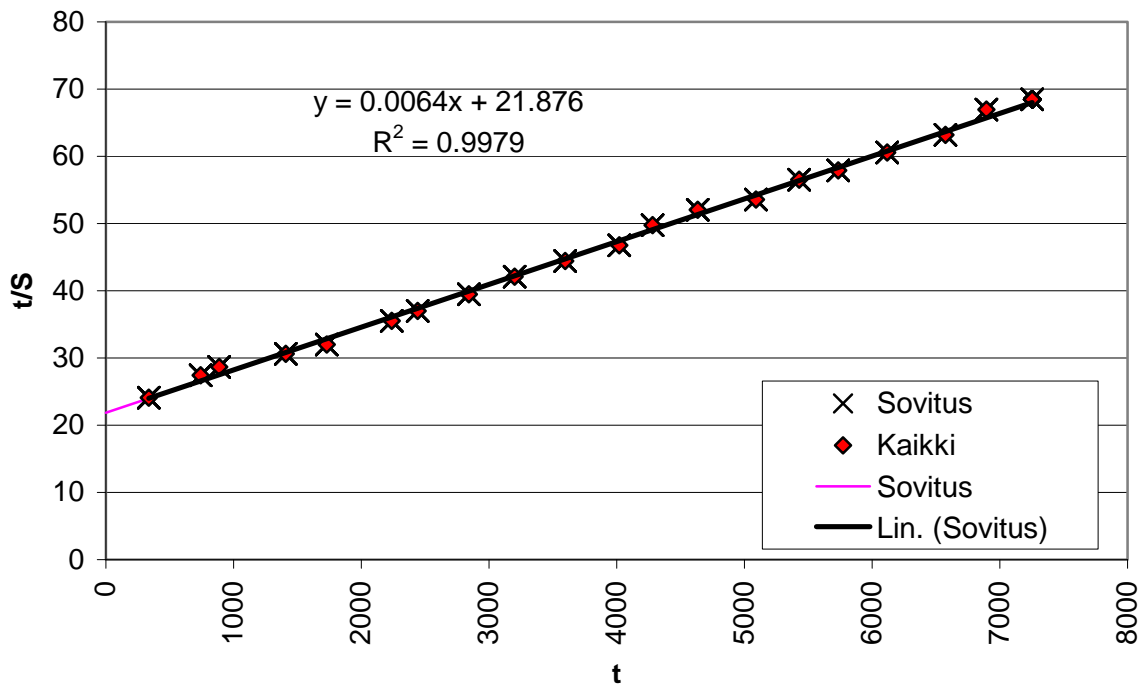


Aika-Painuma kuvaaja

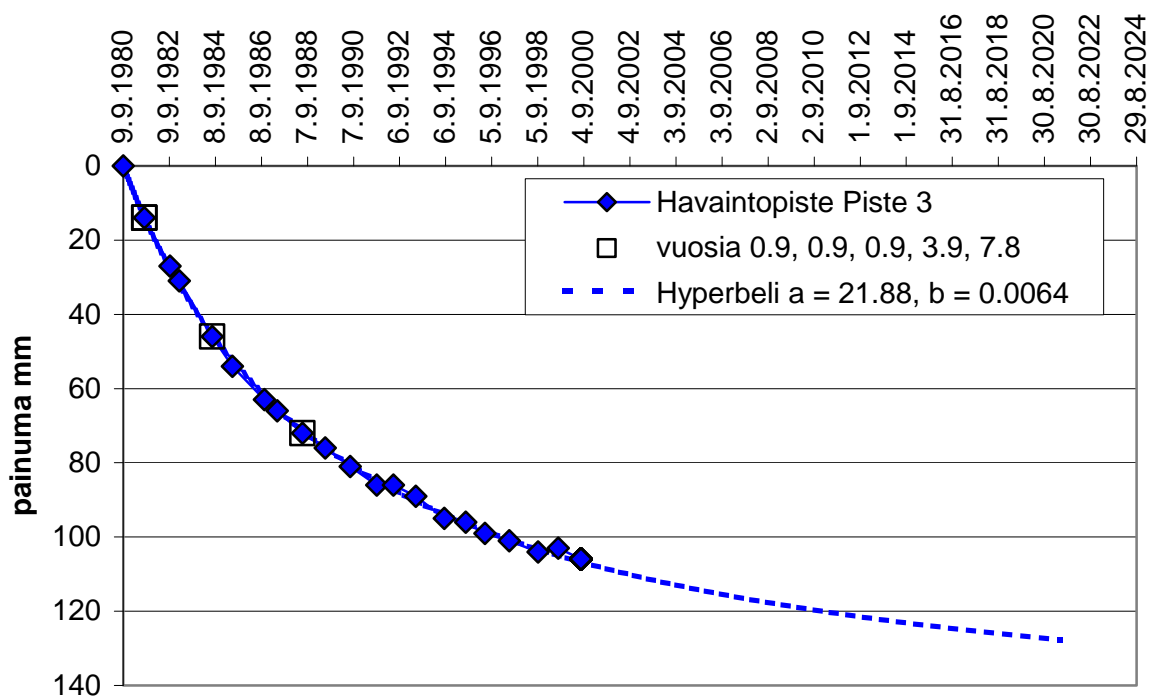




				pain. t (a)	tod. t
				40	40
input			output		
	a	b	Painuma	pain40	virh. mm
Hyperbeli	21.88	6.36E-03	157	127	ei havaint.



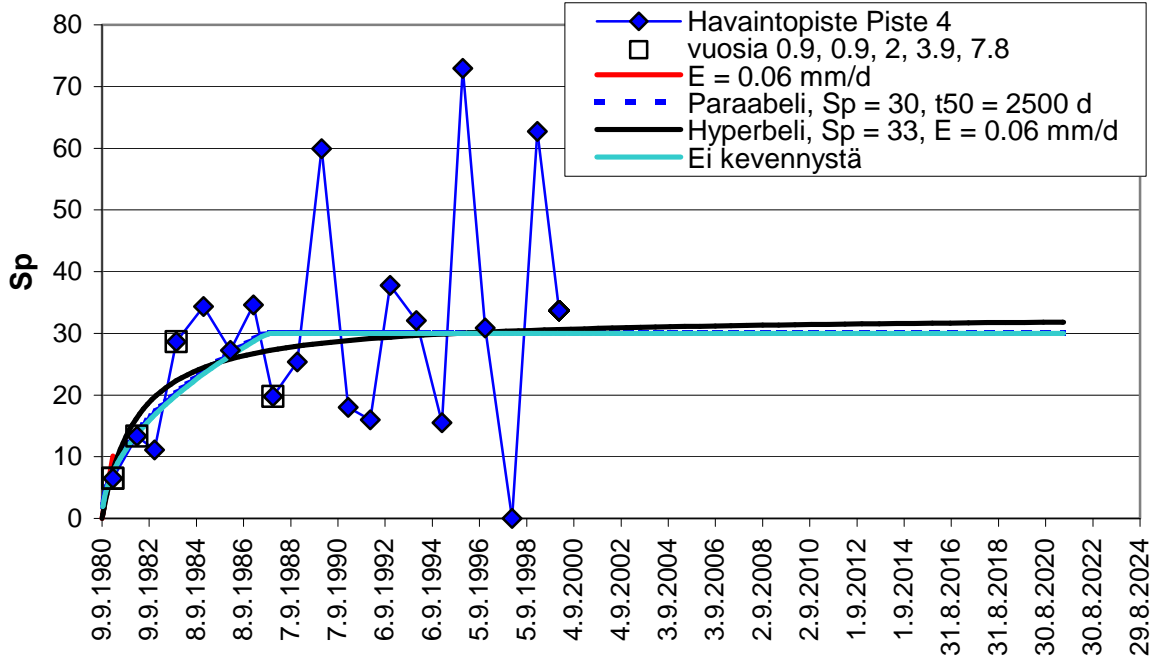
Aika-Painuma kuvaaja



Itäkeskuksen päiväkoti, 20 v

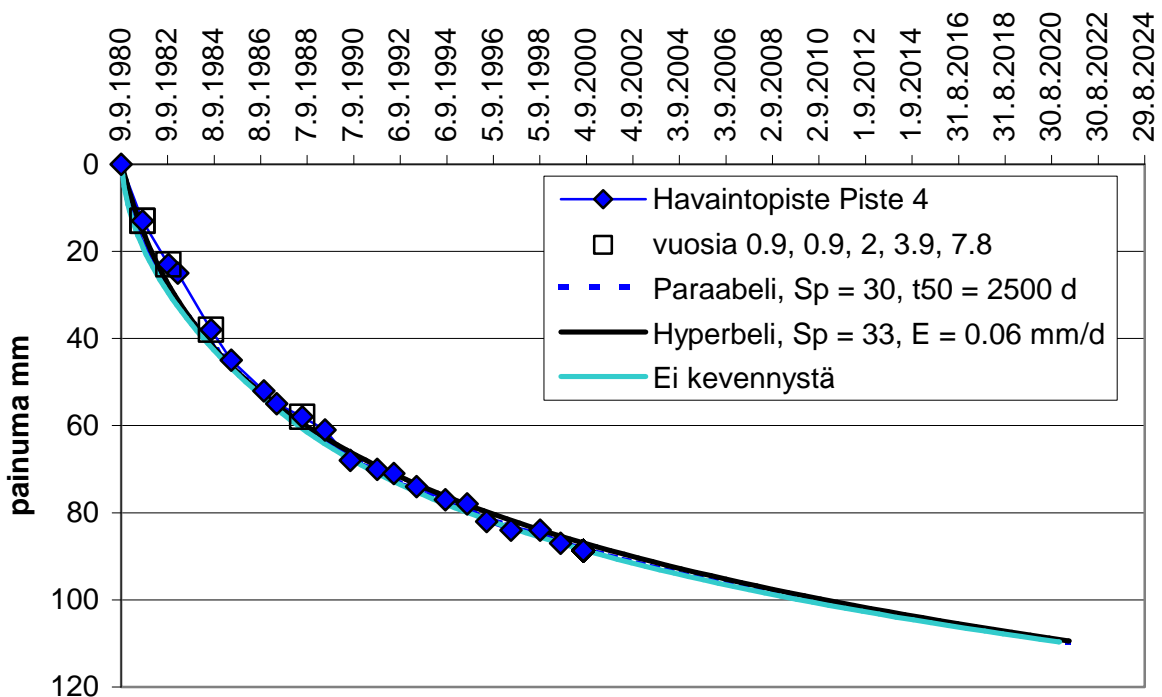
Havaintopiste Piste 4

○ 1-puol. kl	H	w	m (b = 0)	m	alkupai.	t0 (d)	pain. t (a)	tod. t
● 2-puol. kl	6	80	6.7...11.4	8	0	10	40	40
input					80			
	Sp	t50/E	rs	B	c _v	pain. 40	virh. mm	
Paraabeli	30	2500	200	0.040	0.3	109	ei havaint.	
Hyperbeli	33	0.06	182	0.044		109	ei havaint.	

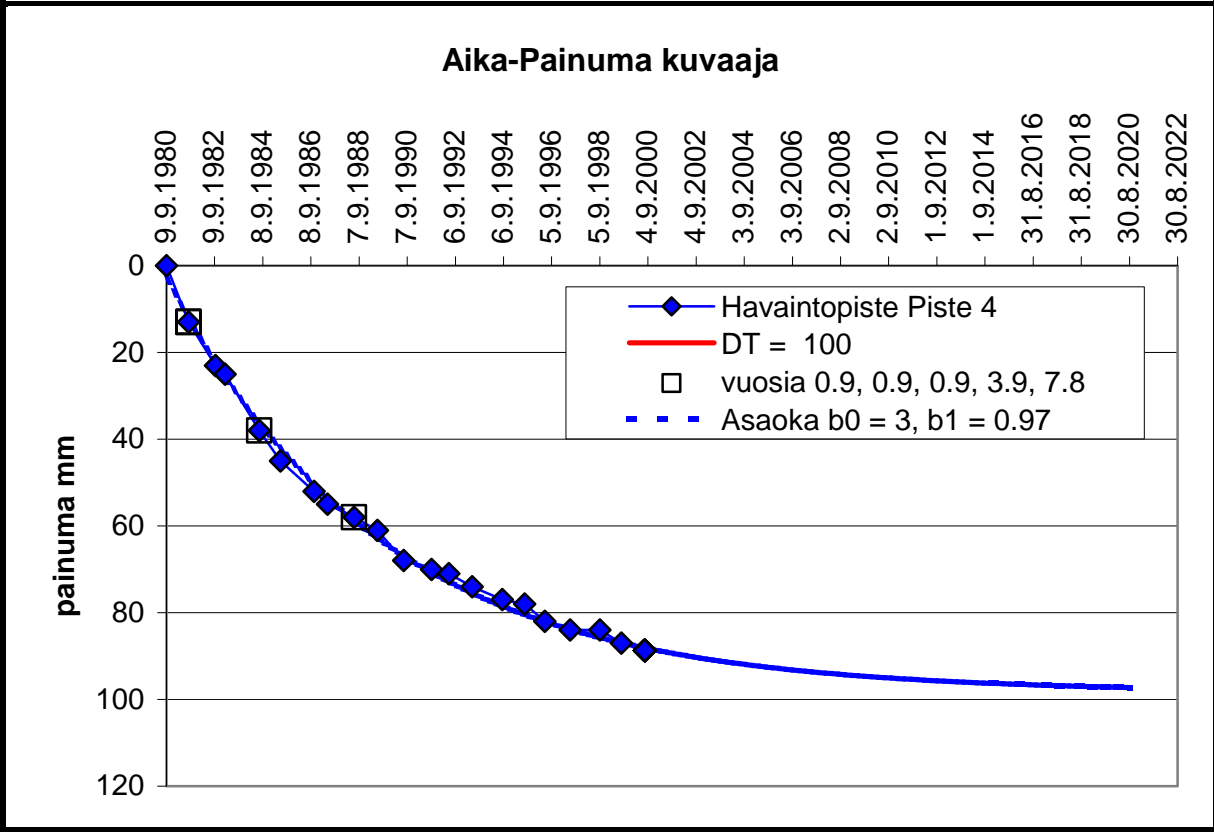
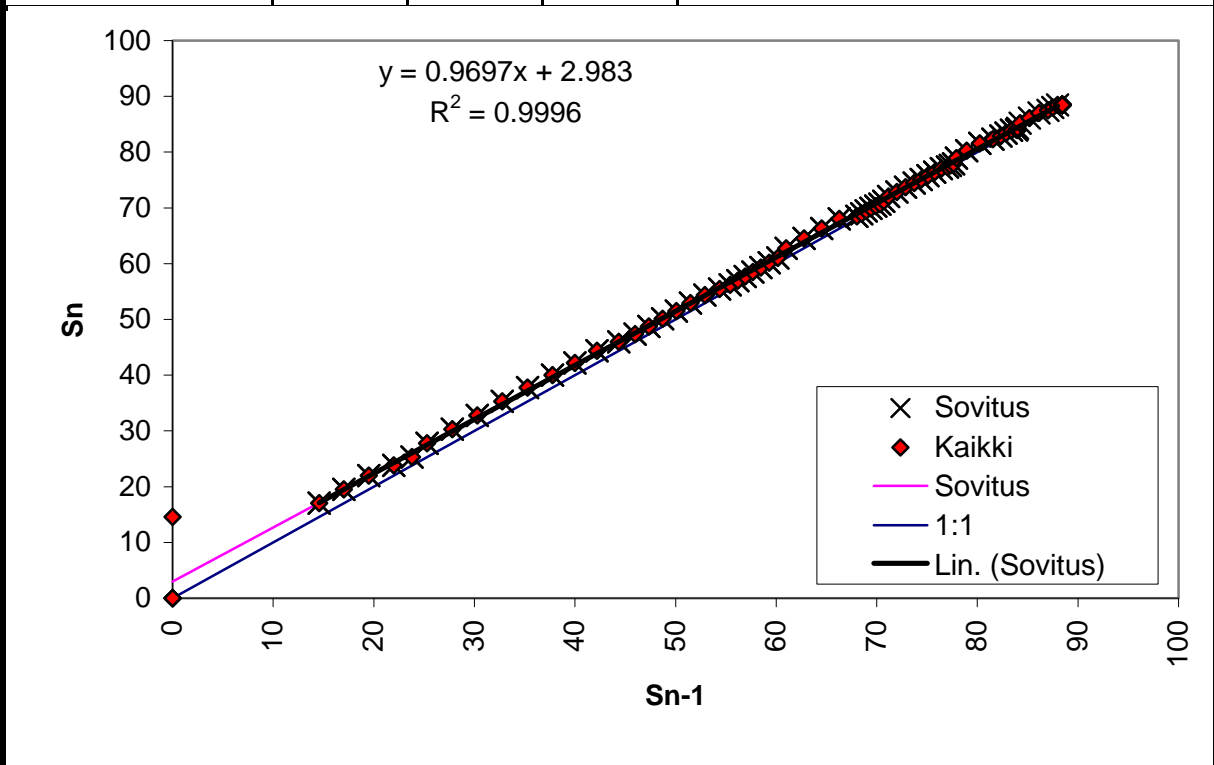


Aika-Painumapotentiaali kuvaaja

Aika-Painuma kuvaaja



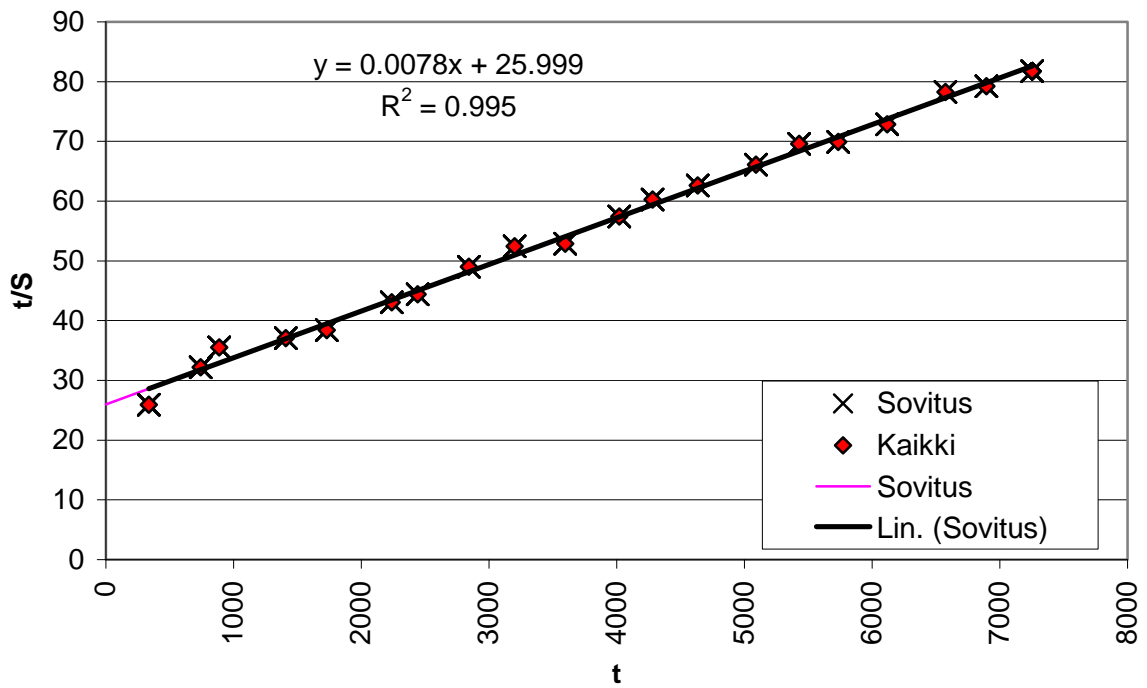
				pain. t (a)	tod. t	
				40	40	
input			output			
	β_0	β_1	t	Prim. Pain.	pain40	virh. mm
Asaoka	3.0	0.970	100.00	98	97	ei havaint.
	3.0	0.970	100.00			



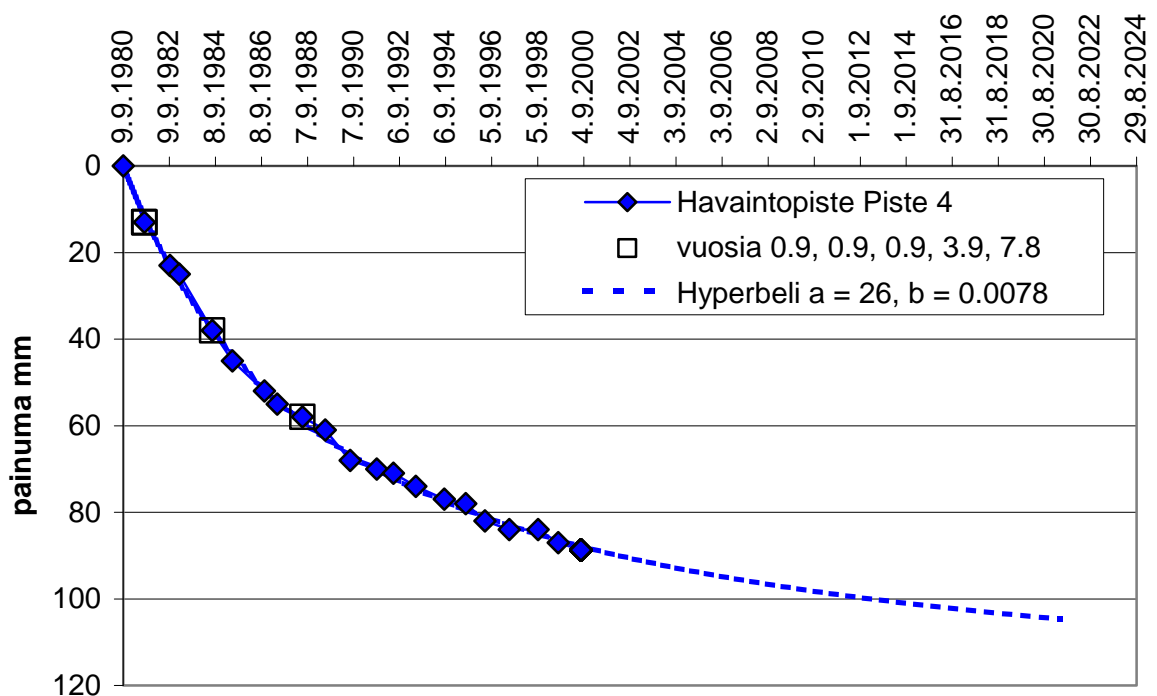


pain. t (a)	tod. t
40	40

input			output			
	a	b	Painuma		pain40	virh. mm
Hyperbeli	26.00	7.81E-03	128		104	ei havaint.



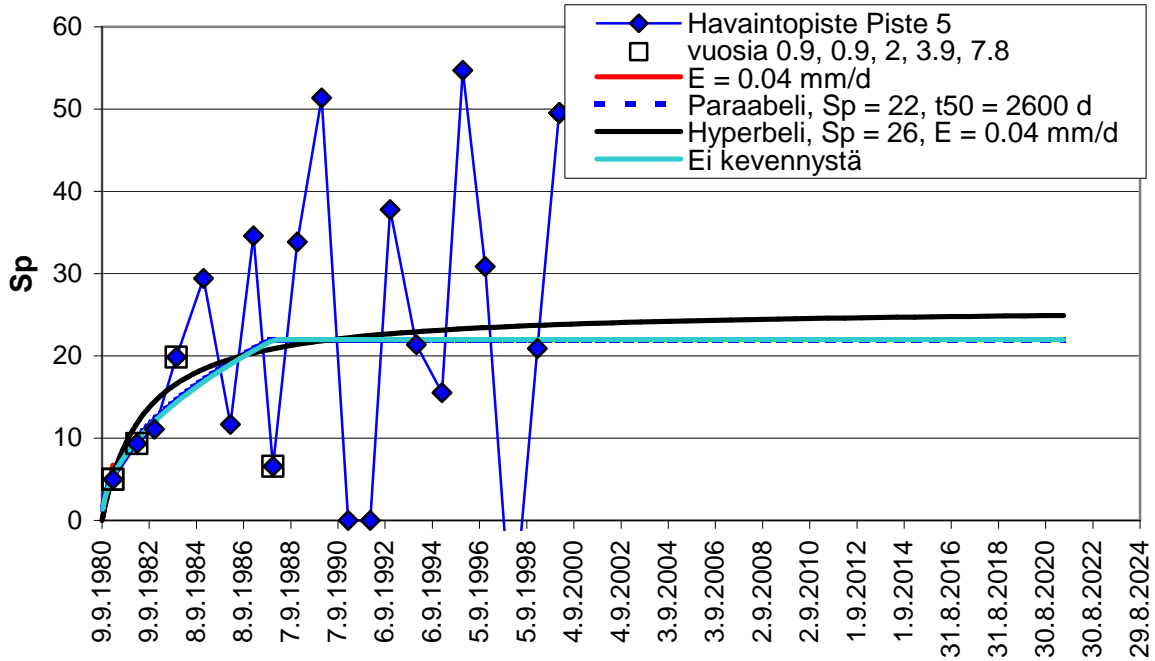
Aika-Painuma kuvaaja



Itäkeskuksen päiväkoti, 20 v

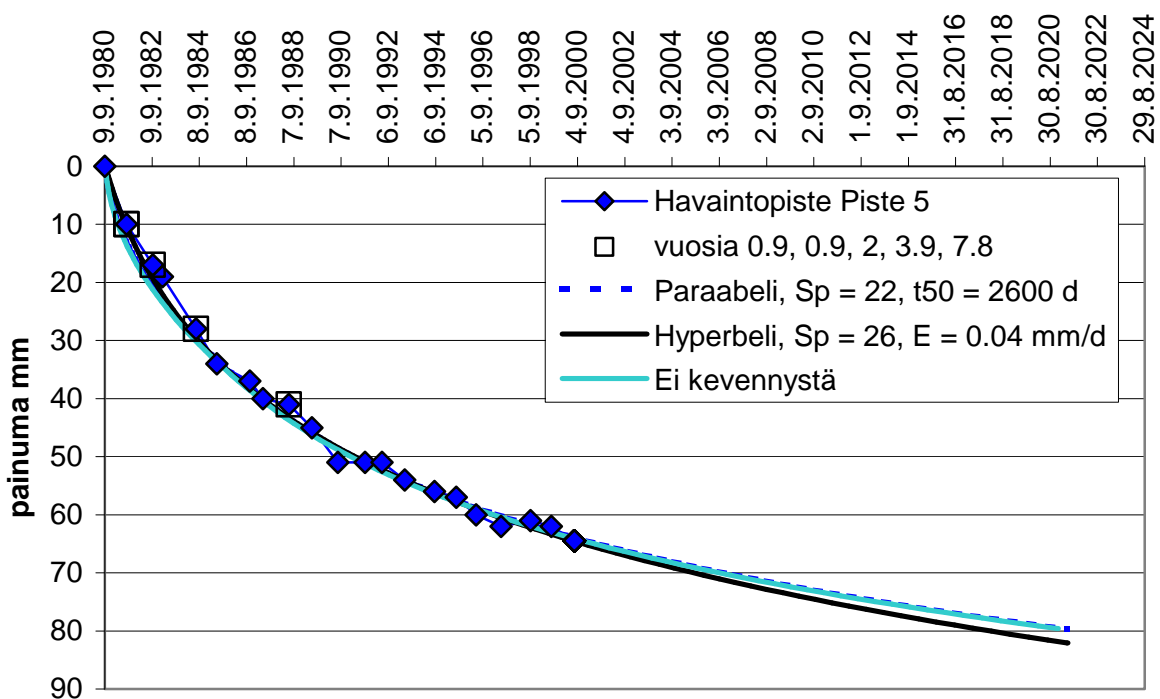
Havaintopiste Piste 5

○ 1-puol. kl	H	w	m (b = 0)	m	alkupai.	t0 (d)	pain. t (a)	tod. t
● 2-puol. kl	6	80	6.7...11.4	8	0	10	40	40
input				80				
	Sp	t50/E	rs	B	c _v	pain. 40	virh. mm	
Paraabeli	22	2600	273	0.029	0.2	79	ei havaint.	
Hyperbeli	26	0.04	231	0.035		82	ei havaint.	



Aika-Painumapotentiaali kuvaaja

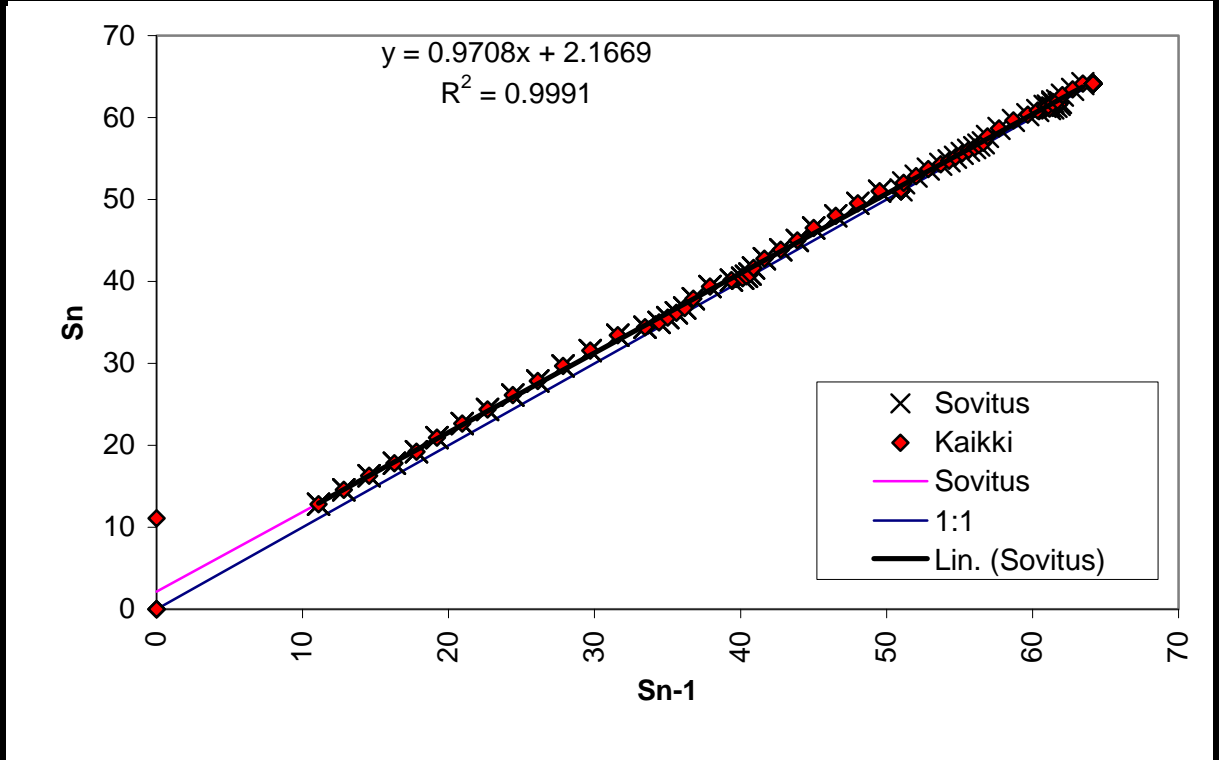
Aika-Painuma kuvaaja



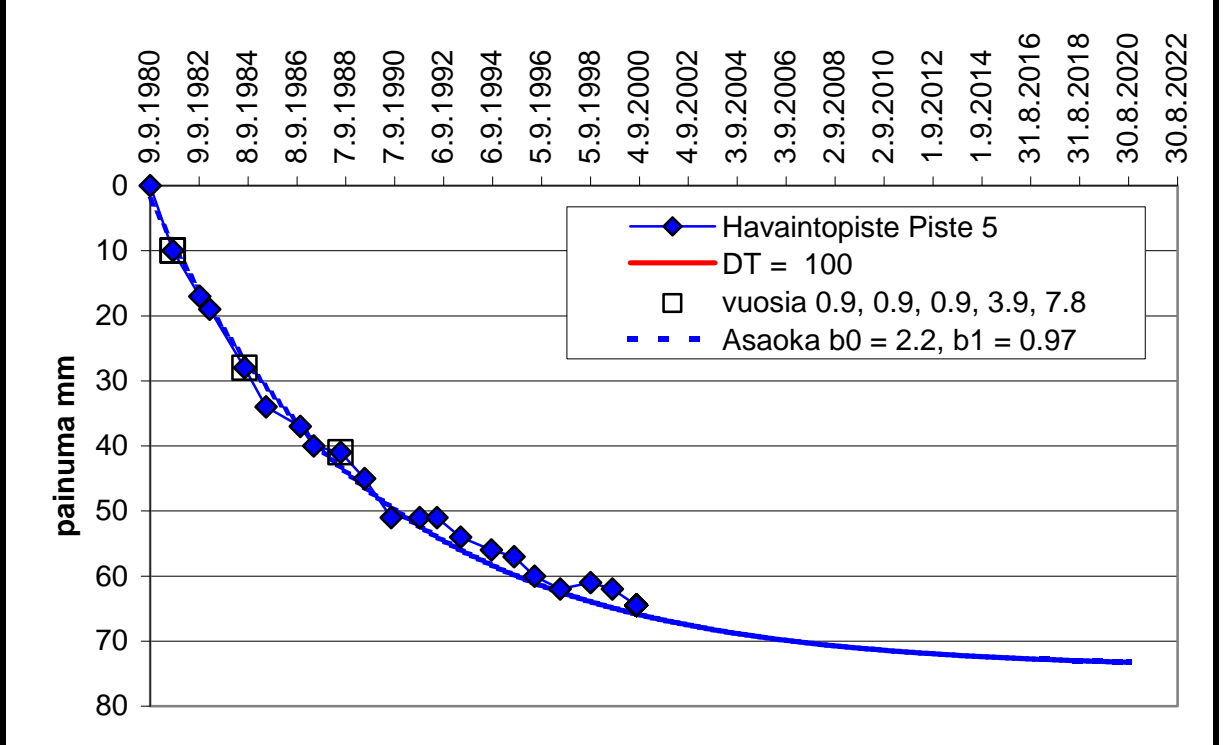


pain. t (a)	tod. t
40	40

input				output			
	β_0	β_1	t	Prim. Pain.		pain40	virh. mm
Asaoka	2.2	0.971	100.00	74		73	ei havaint.
	2.2	0.971	100.00				



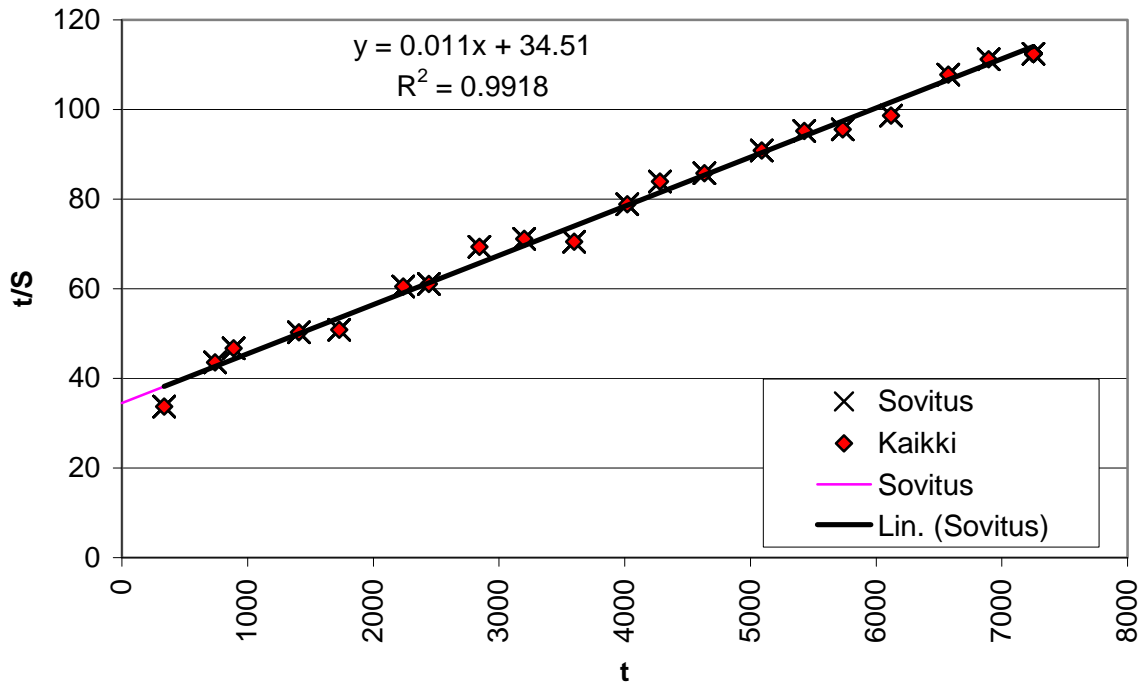
Aika-Painuma kuvaaja



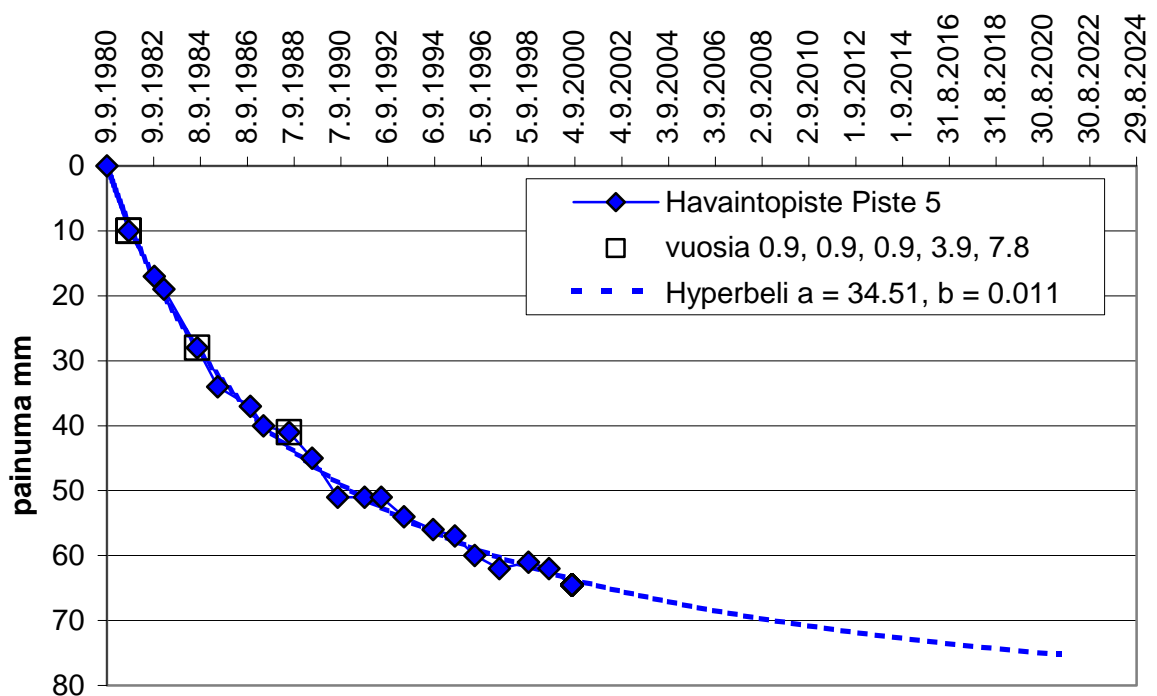


pain. t (a)	tod. t
40	40

input			output			
	a	b	Painuma		pain40	virh. mm
Hyperbeli	34.51	1.10E-02	91		75	ei havaint.



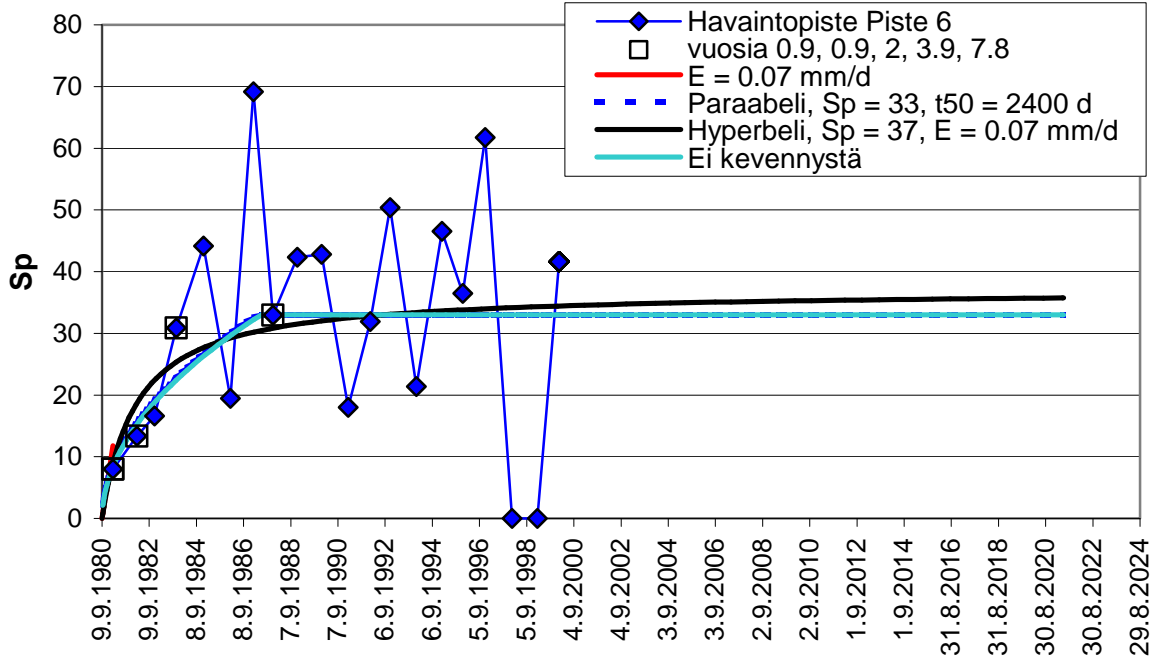
Aika-Painuma kuvaaja



Itäkeskuksen päiväkoti, 20 v

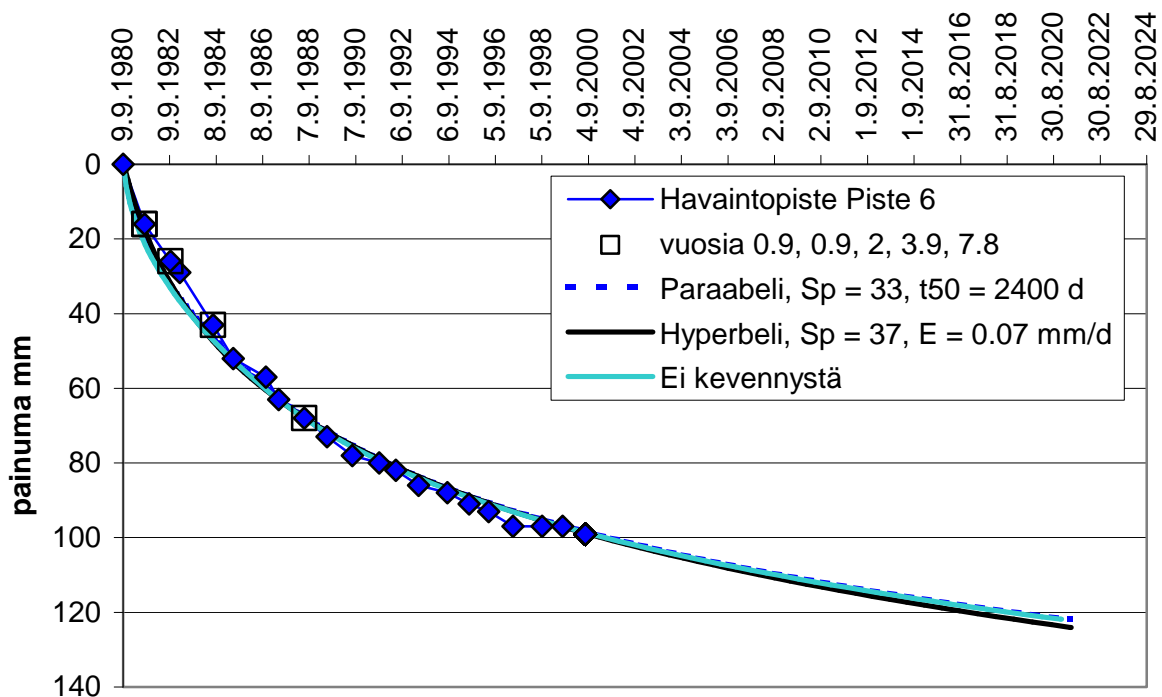
Havaintopiste Piste 6

○ 1-puol. kl	H	w	m (b = 0)	m	alkupai.	t0 (d)	pain. t (a)	tod. t
● 2-puol. kl	6	80	6.7...11.4	8	0	10	40	40
input				80				
	Sp	t50/E	rs	B	c _v	pain. 40	virh. mm	
Paraabeli	33	2400	182	0.044	0.3	121	ei havaint.	
Hyperbeli	37	0.07	162	0.049		123	ei havaint.	



Aika-Painumapotentialiaali kuvaaja

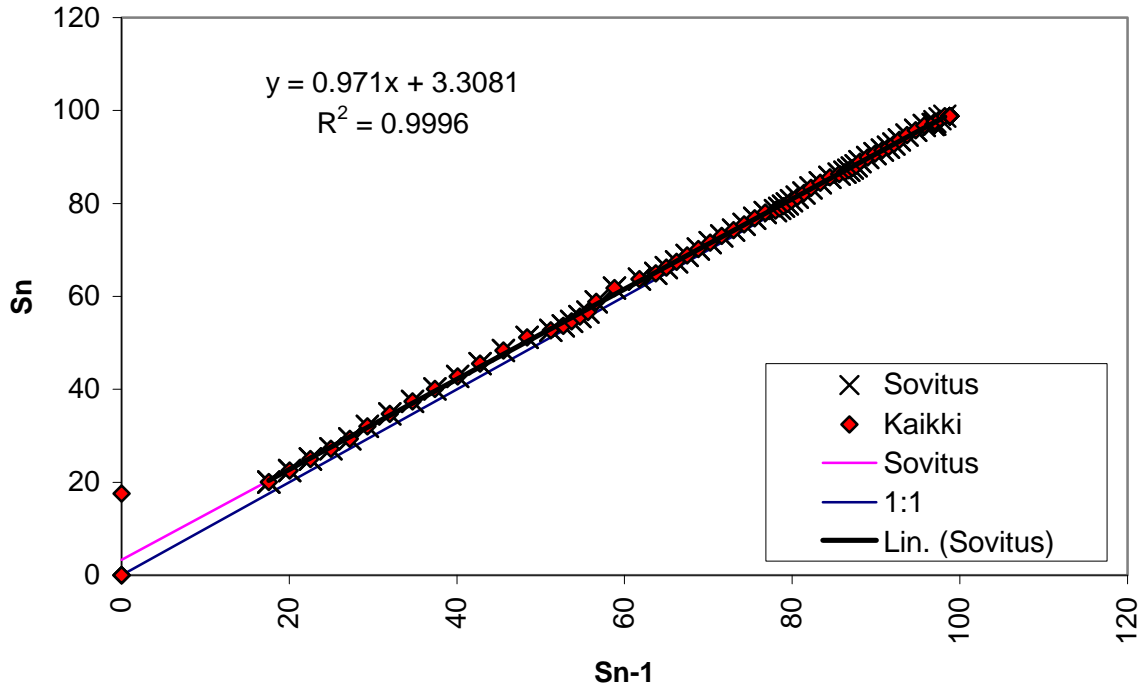
Aika-Painuma kuvaaja



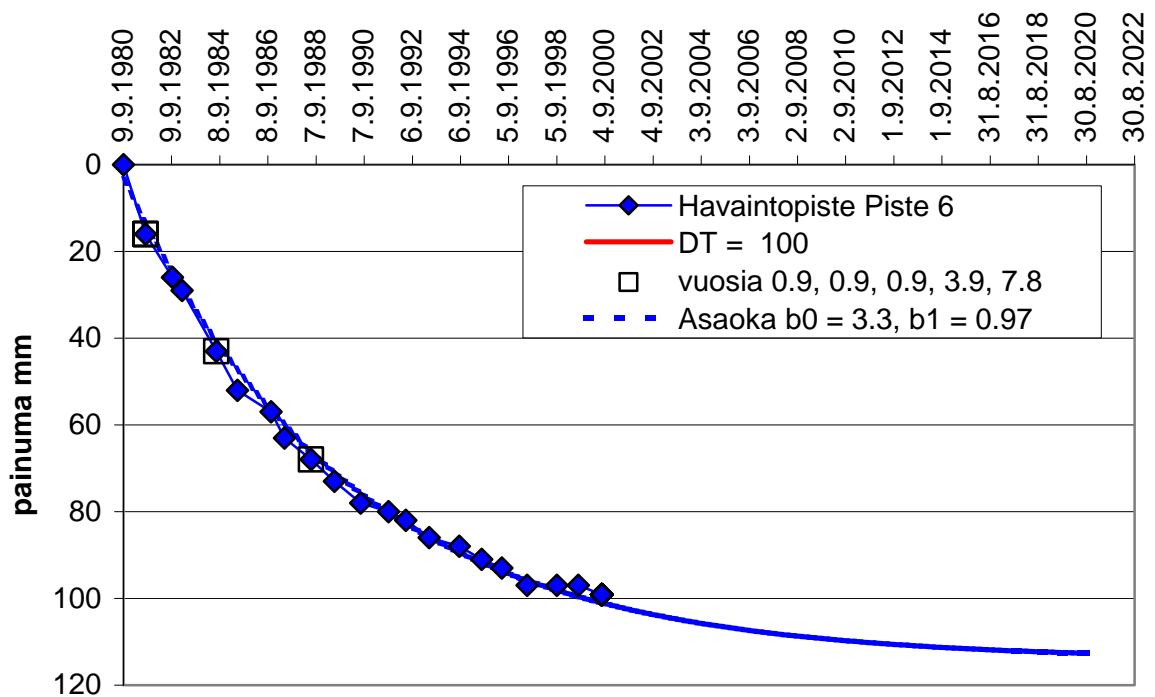


pain. t (a)	tod. t
40	40

input				output			
	β_0	β_1	t	Prim. Pain.		pain40	virh. mm
Asaoka	3.3	0.971	100.00	114		113	ei havaint.
	3.3	0.971	100.00				



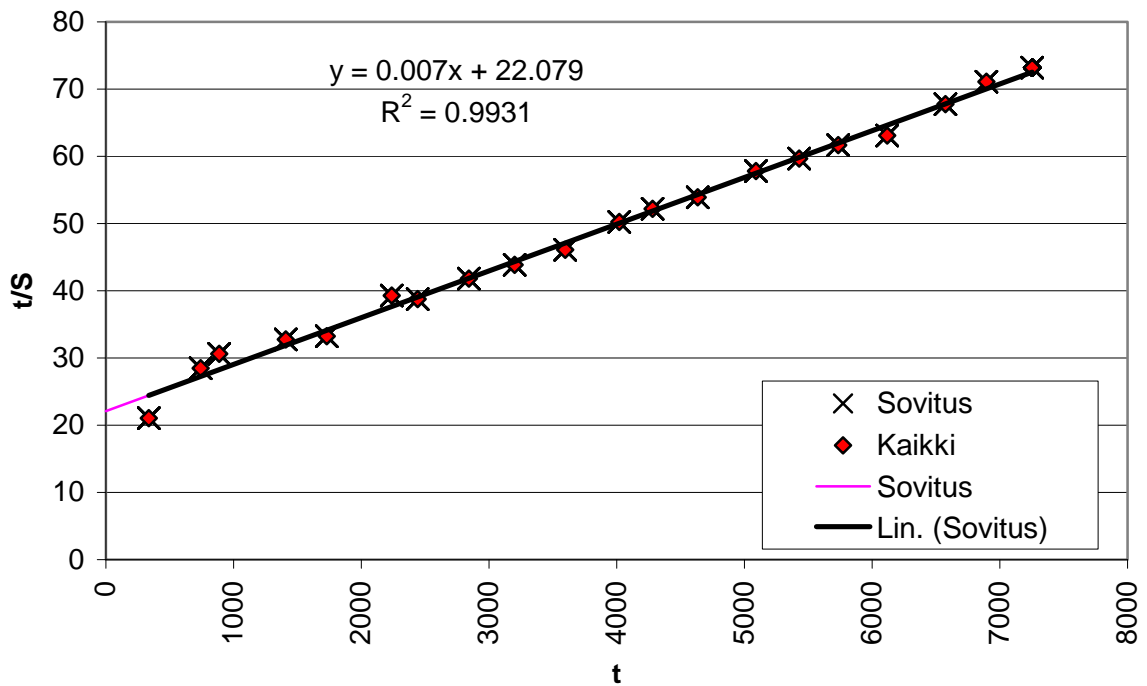
Aika-Painuma kuvaaja



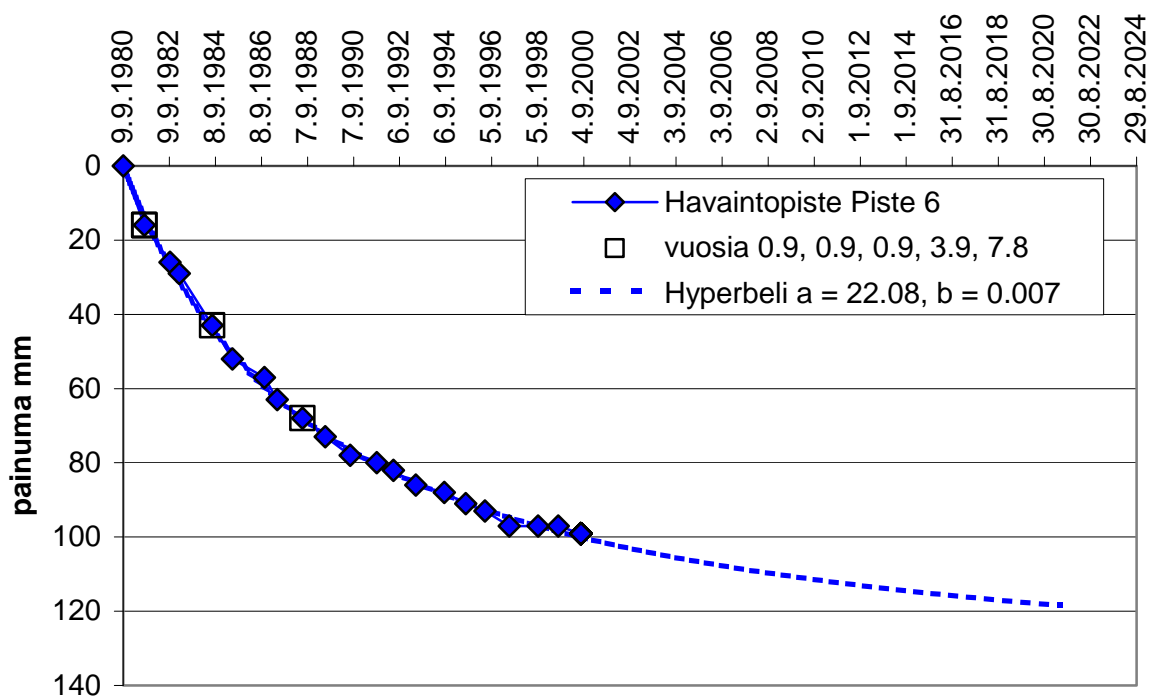


pain. t (a)	tod. t
40	40

input			output			
	a	b	Painuma		pain40	virh. mm
Hyperbeli	22.08	6.96E-03	144		118	ei havaint.



Aika-Painuma kuvaaja



Painumaennuste

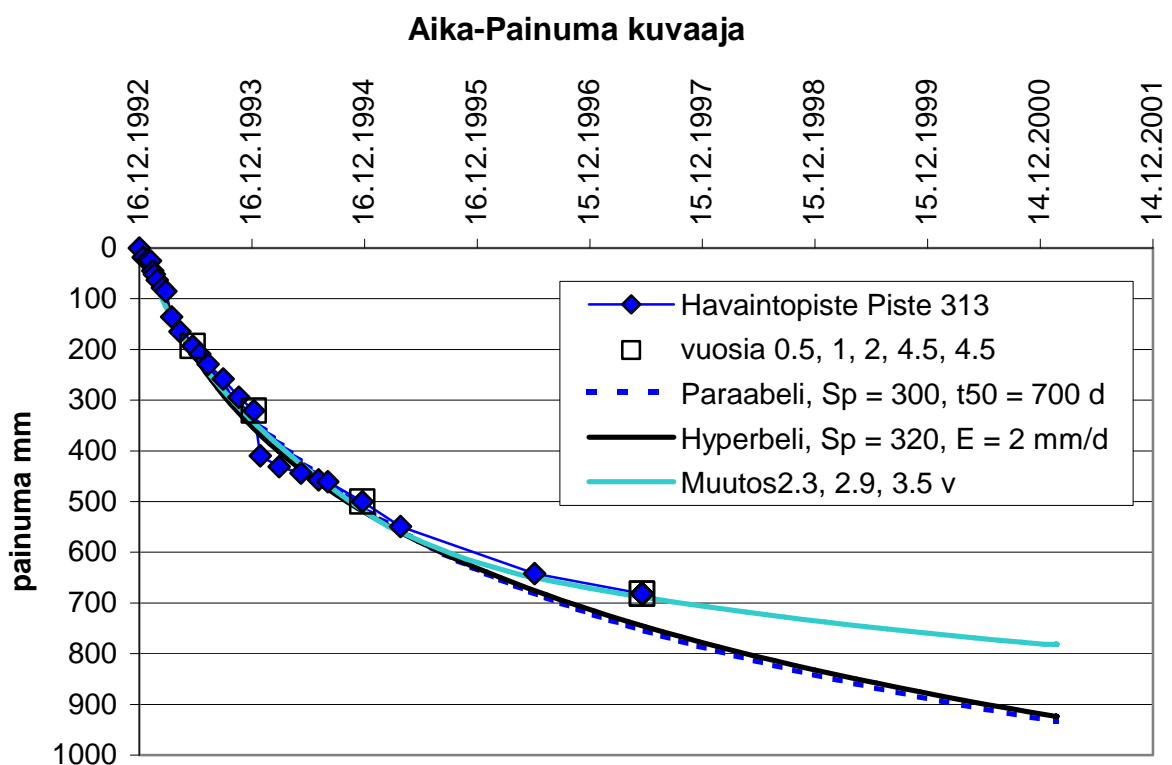
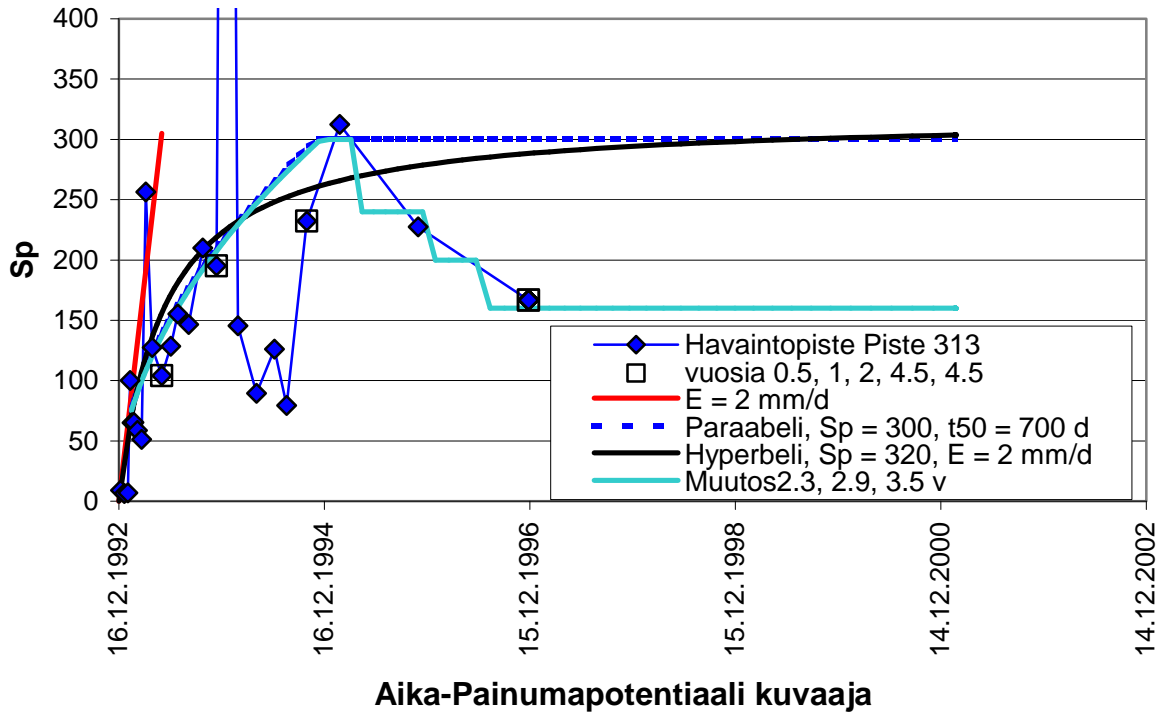
Painumapotentiaali

LIITE XI / s. 1

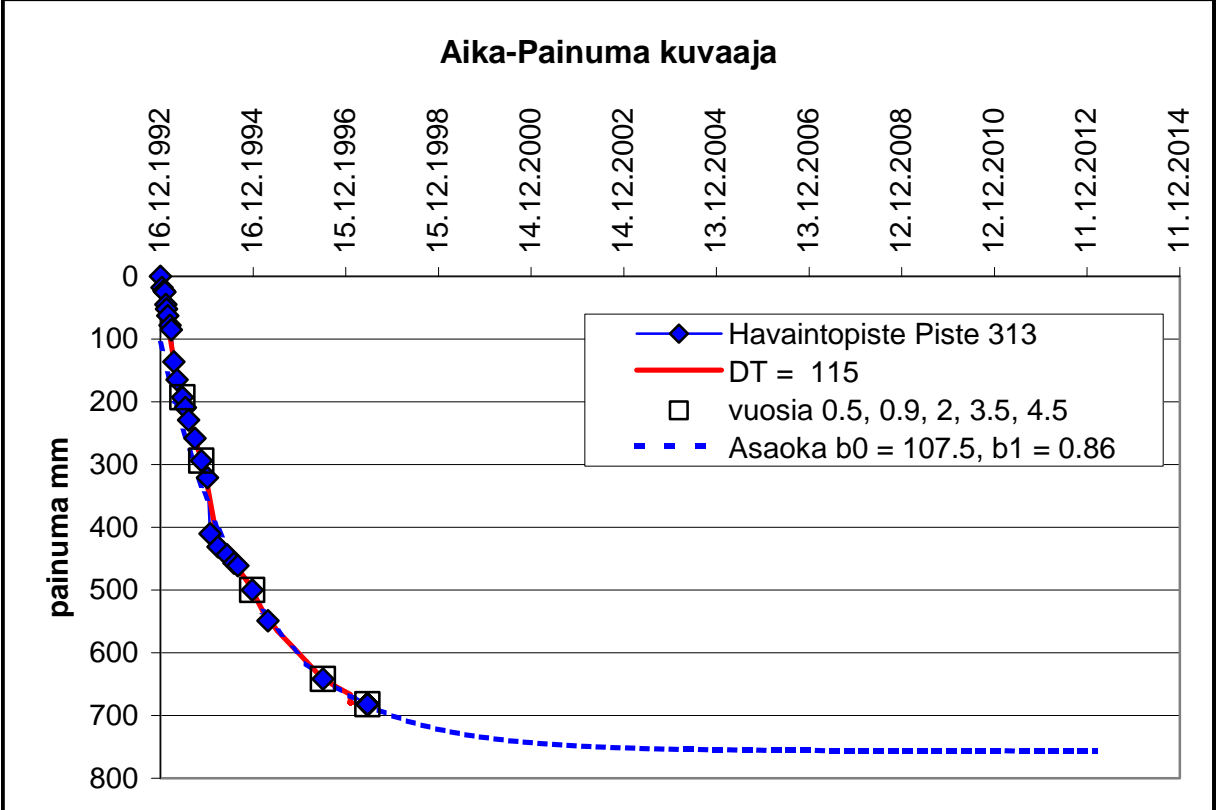
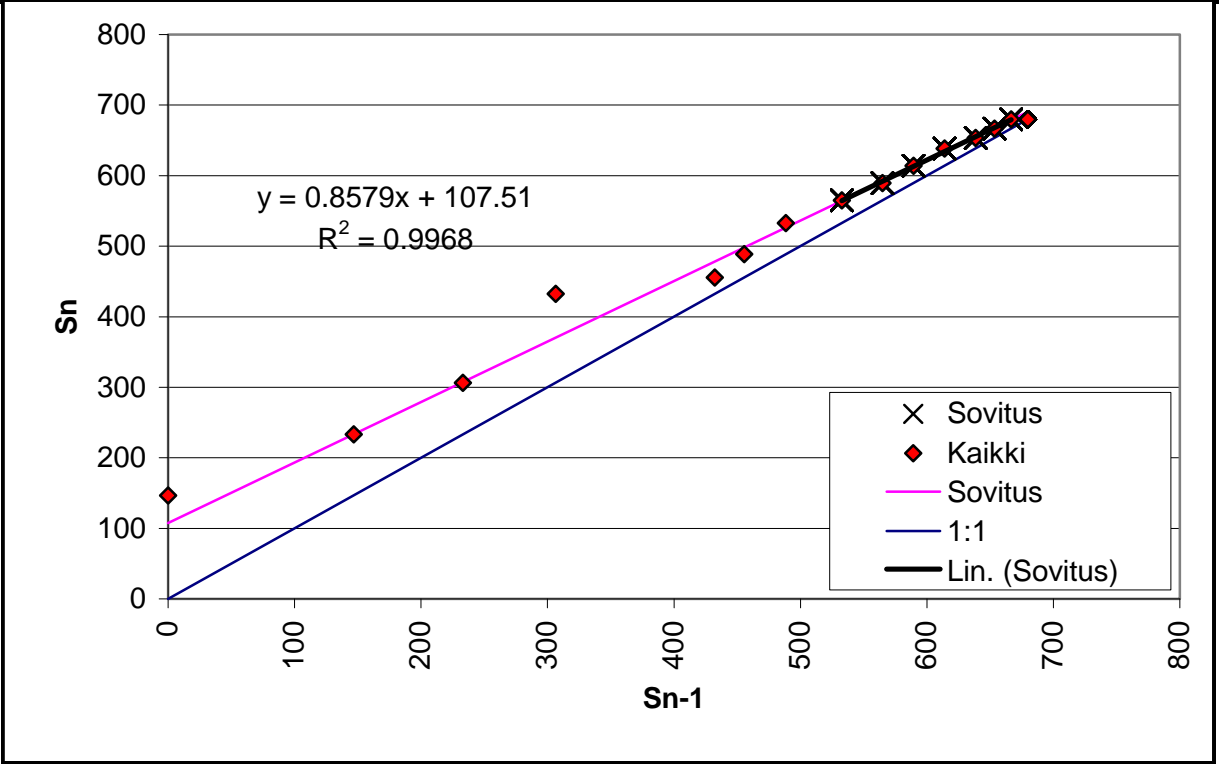
Pikku-Huopalahti, Tilkan stab. 4,5 v

Havaintopiste Piste 313

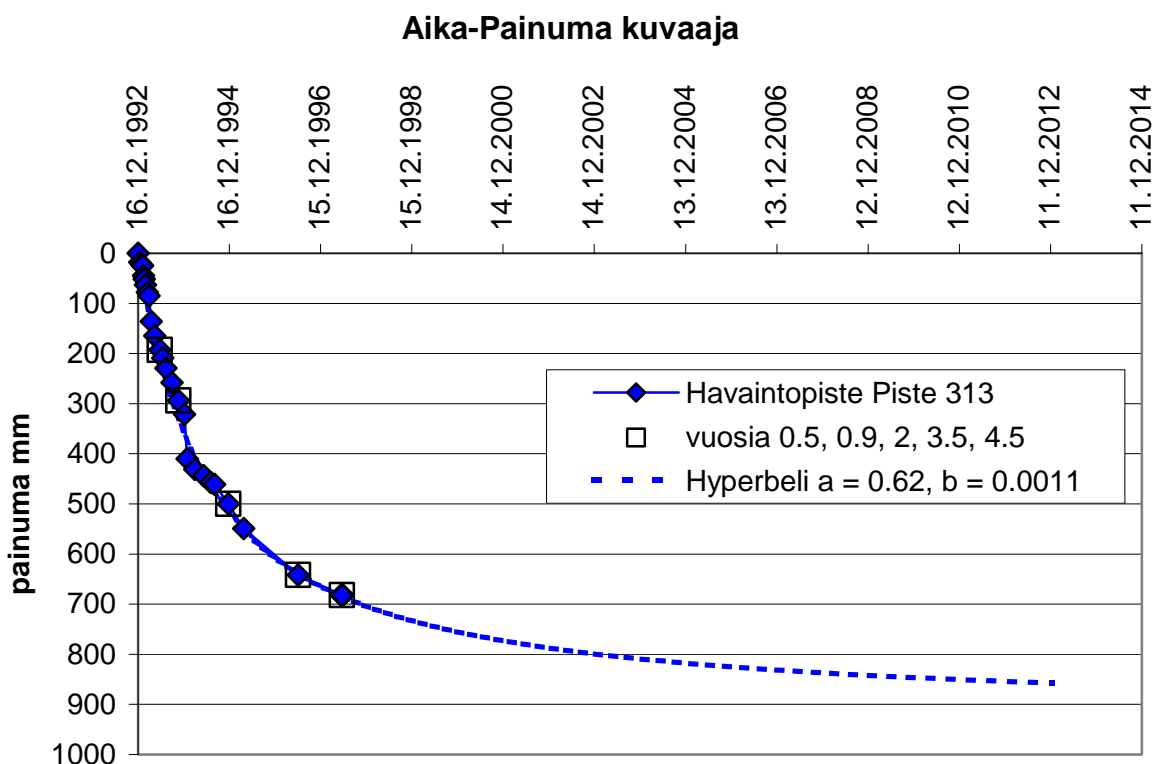
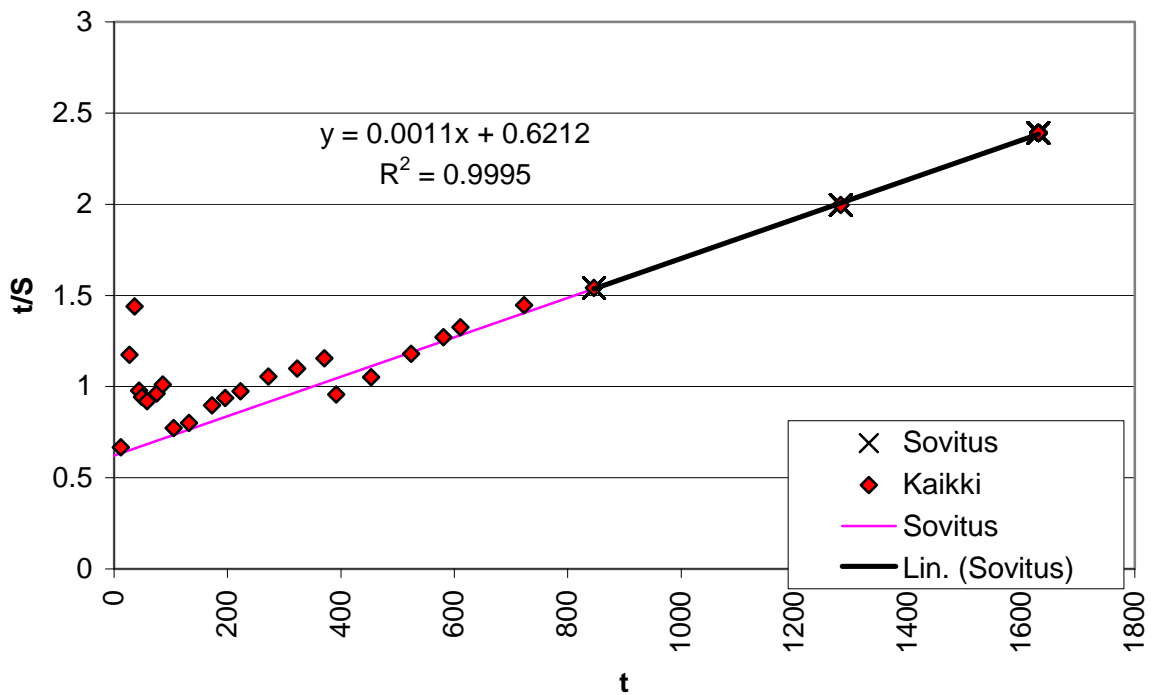
○ 1-puol. kl	H	w	m (b = 0)	m	alkupai.	t0 (d)	pain. t (a)	tod. t
● 2-puol. kl	13	90	6...10.1	5	50	44	6.5	6.5
input					80			
0	Sp	t50/E	rs	B	c _v	pain. 6.5	virh. mm	
Paraabeli	300	700	43	0.115	4.3	747	ei havaint.	
Hyperbeli	320	2.00	41	0.123			ei havaint.	



				pain. t (a)	tod. t	
				6.5	6.62	
input			output			
	β_0	β_1	t	Prim. Pain.	pain6.62	virh. mm
Asaoka	107.5	0.858	115.00	756	731	ei havaint.
	107.5	0.858	115.00			



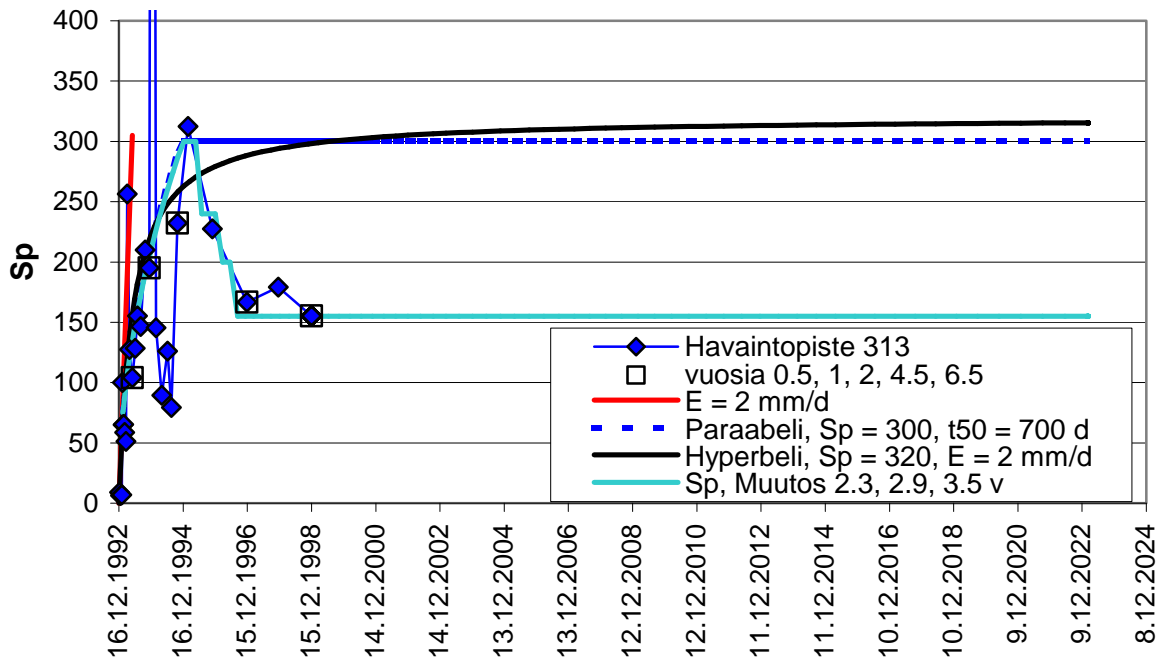
Painumaennuste		Hyperbeli		LIITE XI / s. 3	
Pikku-Huopalahti, Tilkan stab. 4,5 v				Havaintopiste Piste 313	
				pain. t (a)	tod. t
				6.5	6.5
input			output		
	a	b	Painuma		virh. mm
Hyperbeli	0.62	1.08E-03	925	744	ei havaint.



Pikku-Huopalahti, Tilkan stab. 6,5 v

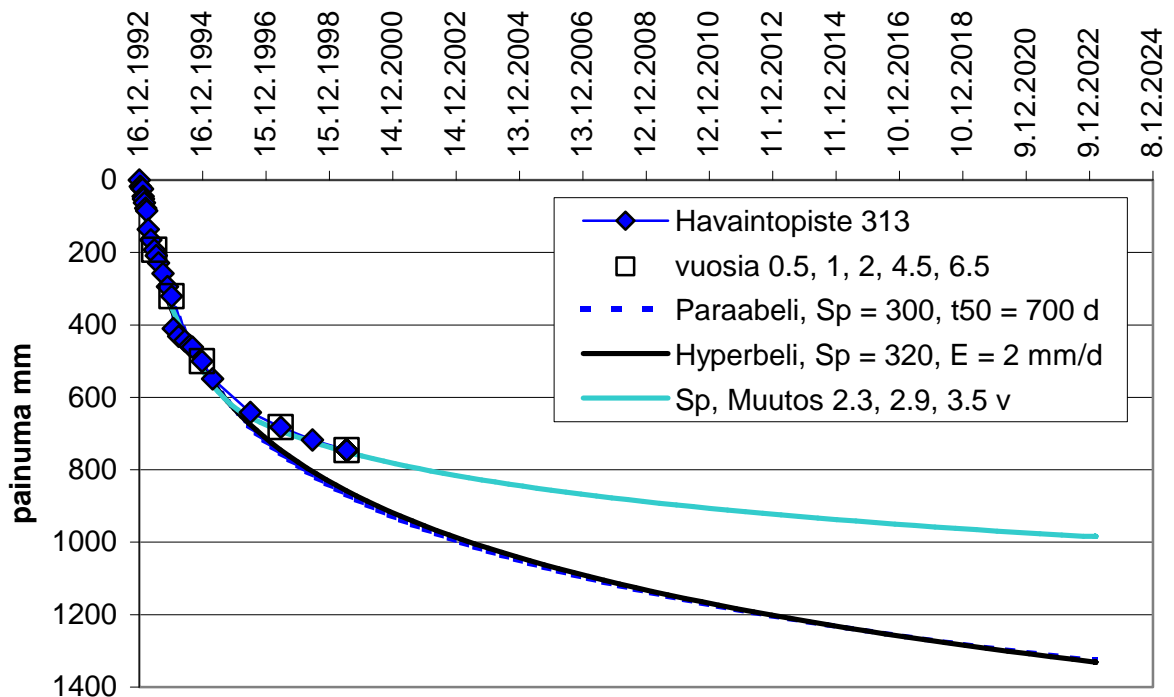
Havaintopiste 313

○ 1-puol. kl.	H	w	m (b = 0)	m	alkupai.	t0 (d)	pain. t (a)	tod. t
● 2-puol. kl.	13	90	6...10.1	5	50	44	30	30
input					80			
0	Sp	t50/E	rs	B	c _v	pain. 30	virh. mm	
Paraabeli	300	700	43	0.115	4.3	984	ei havaint.	
Hyperbeli	320	2.00	41	0.123			ei havaint.	

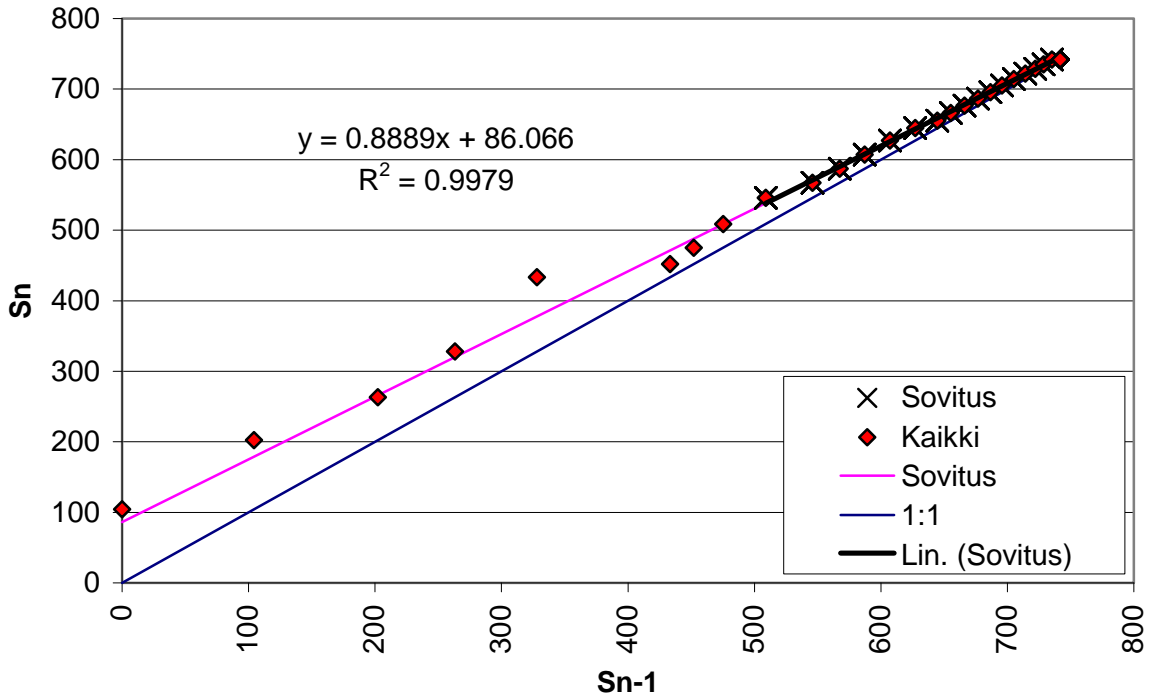


Aika-Painumapotentiaali kuvaaja

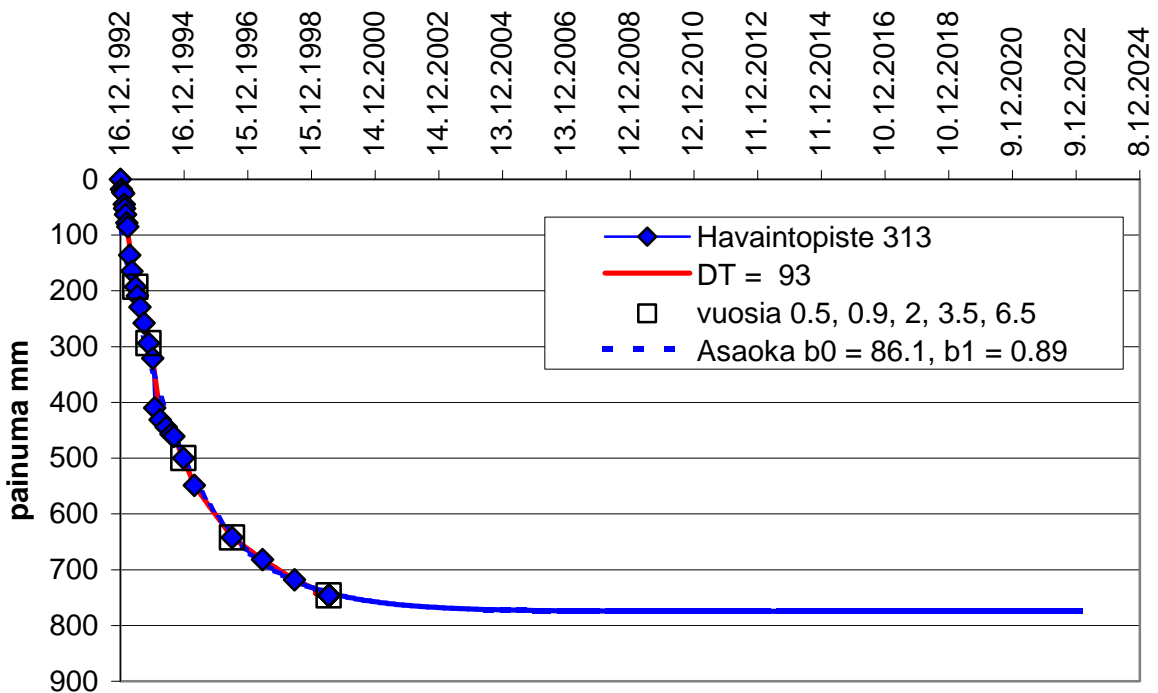
Aika-Painuma kuvaaja



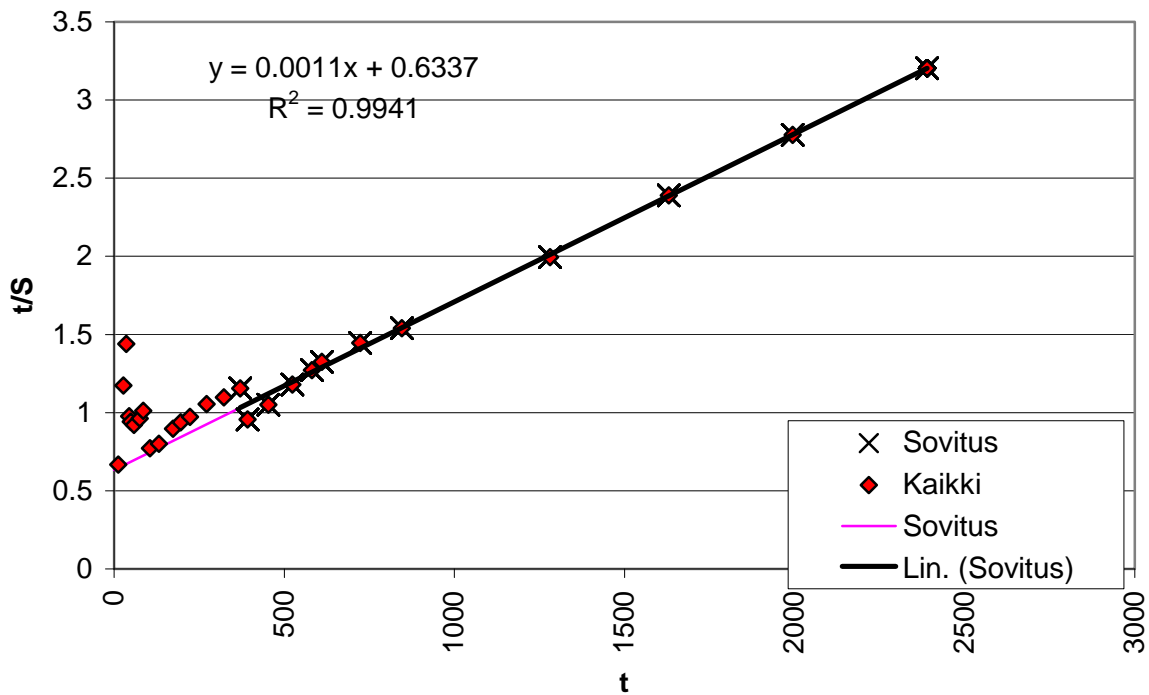
				pain. t (a)	tod. t	
				30	30.12	
input			output			
	β_0	β_1	t	Prim. Pain.	pain30.12	virh. mm
Asaoka	86.1	0.889	93.16	775	775	ei havaint.
	86.1	0.889	93.16			



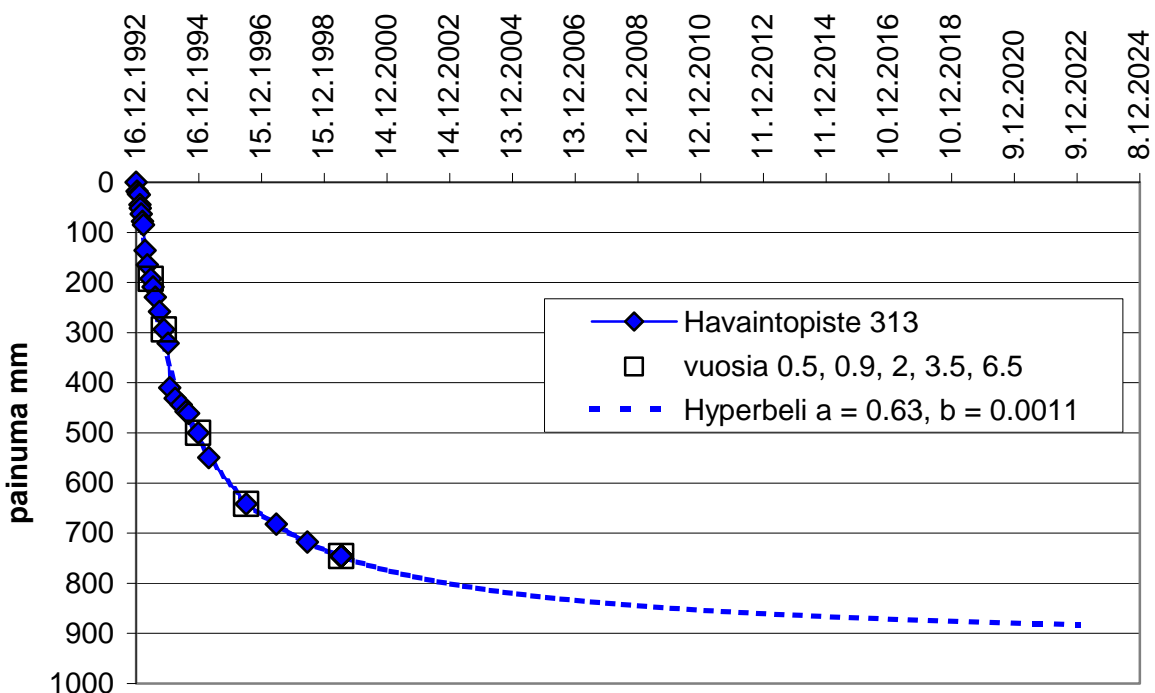
Aika-Painuma kuvaaja



Painumaennuste		Hyperbeli		LIITE XI / s. 6	
Pikku-Huopalahti, Tilkan stab. 6,5 v				Havaintopiste 313	
				pain. t (a)	tod. t
				30	30
input			output		
	a	b	Painuma		virh. mm
Hyperbeli	0.63	1.08E-03	930	883	ei havaint.



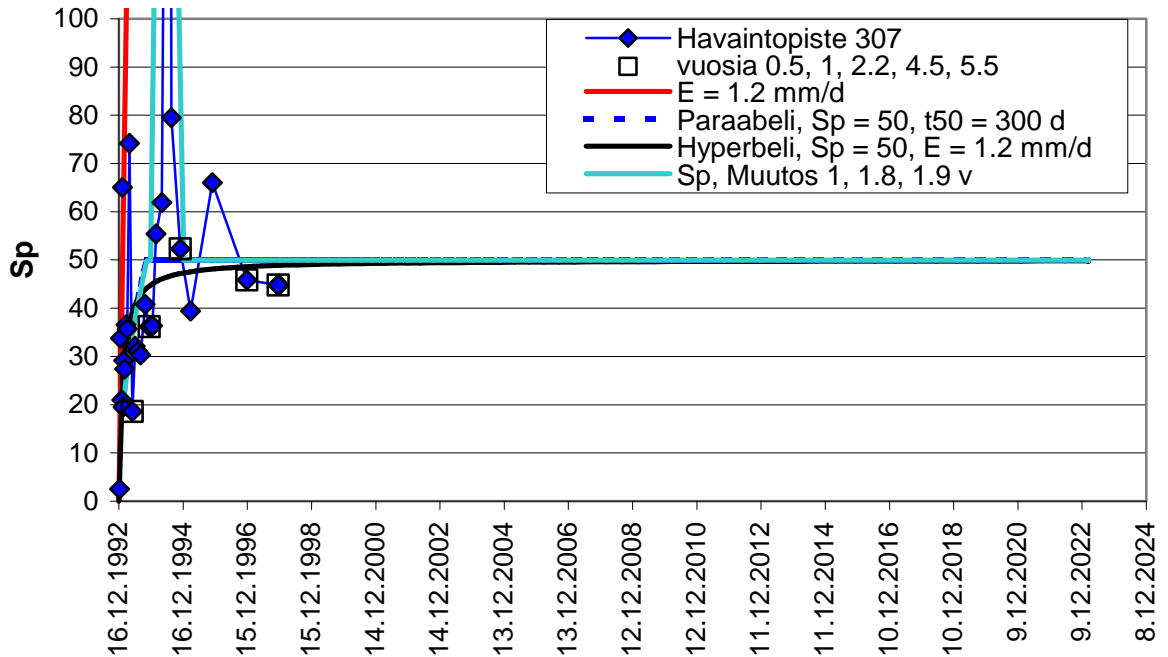
Aika-Painuma kuvaaja



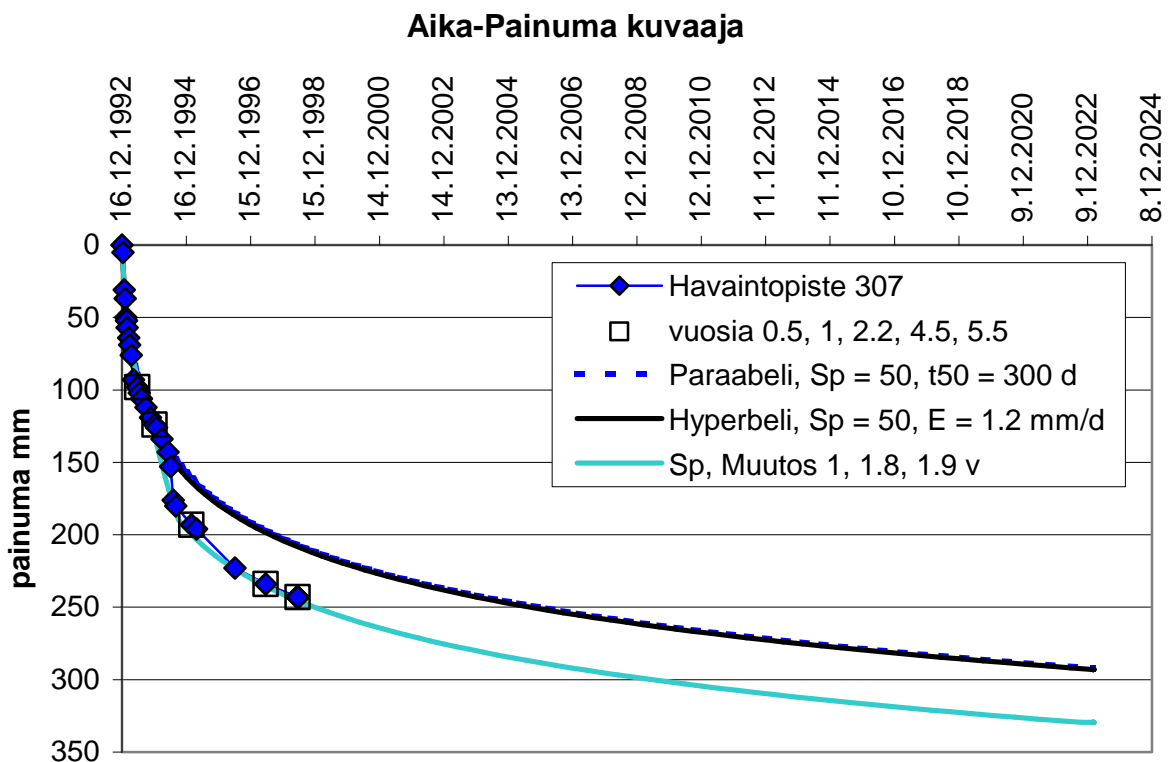
Pikku-Huopalahti, Tilkan stab. 6,5 v

Havaintopiste 307

○ 1-puol. kl	H	w	m (b = 0)	m	alkupai.	t0 (d)	pain. t (a)	tod. t
● 2-puol. kl	15	90	6...10.1	5	50	44	30	30
input				80				
0	Sp	t50/E	rs	B	c _v	pain. 30	virh. mm	
Paraabeli	50	300	300	0.017	13.4	330	ei havaint.	
Hyperbeli	50	1.20	300	0.017			ei havaint.	

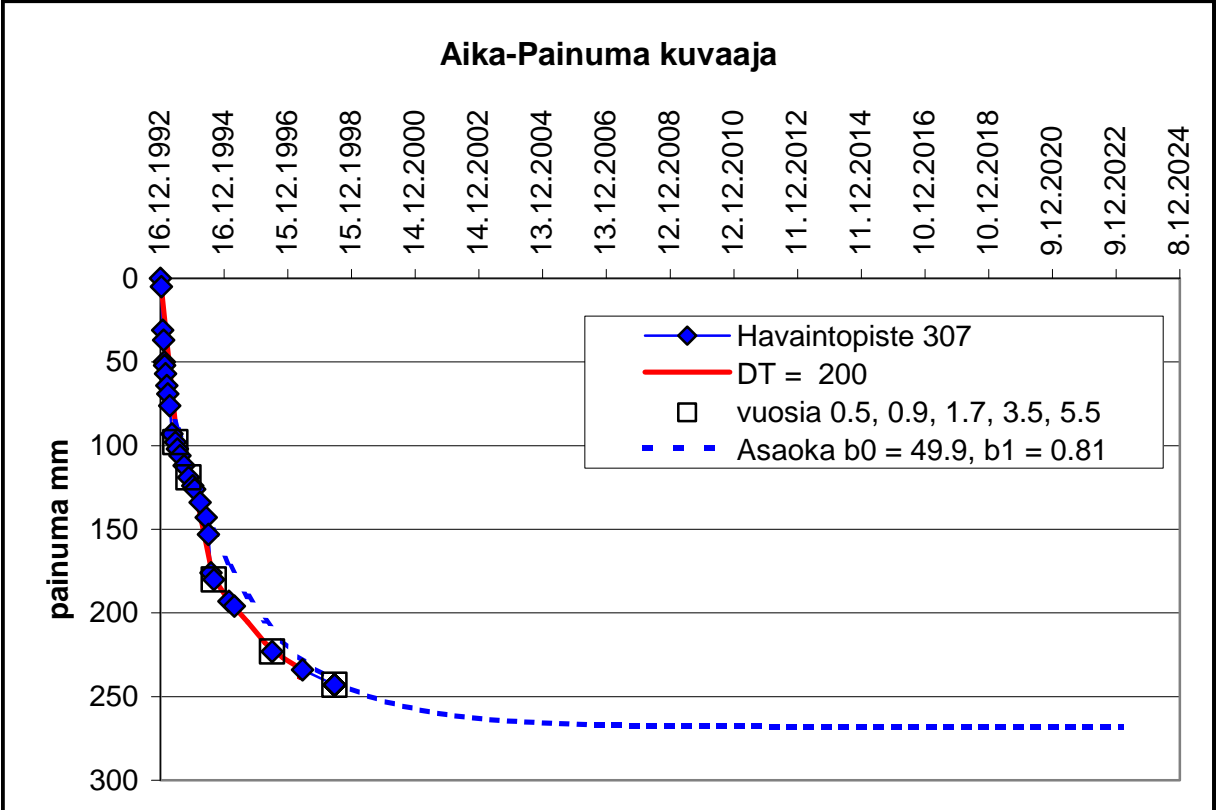
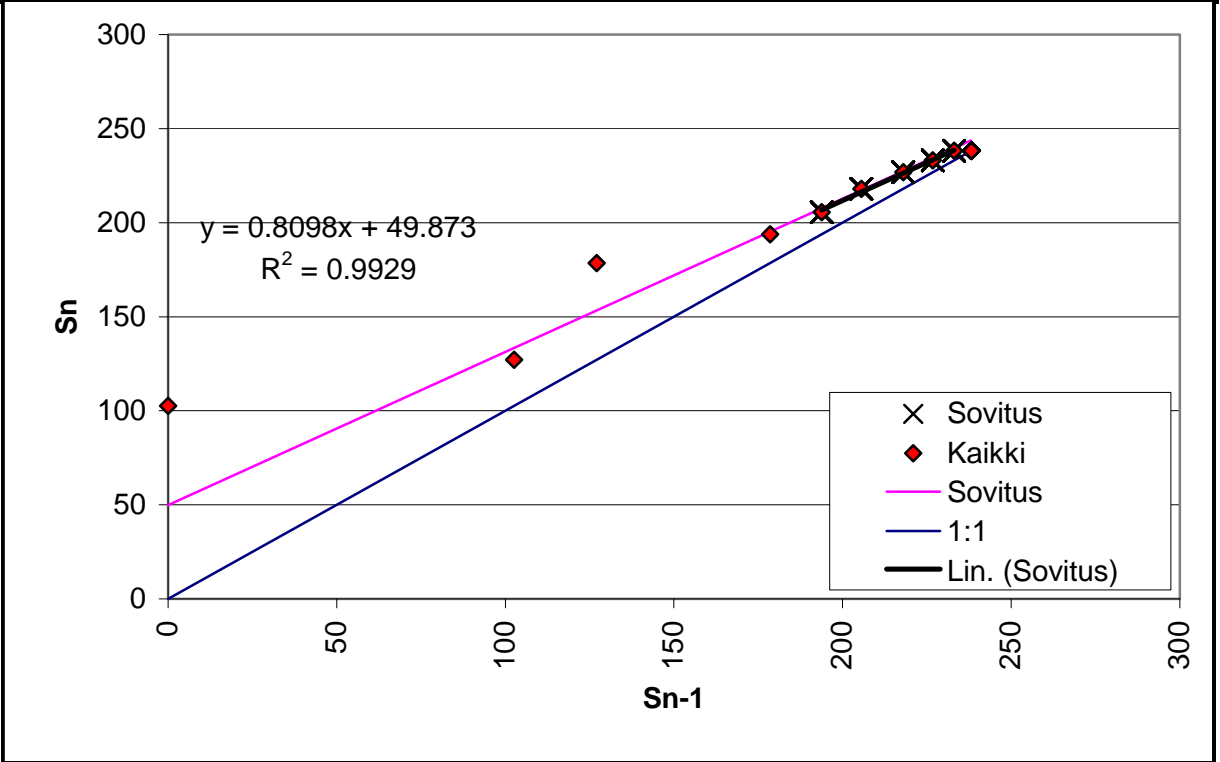


Aika-Painumapotentiaali kuvaaja

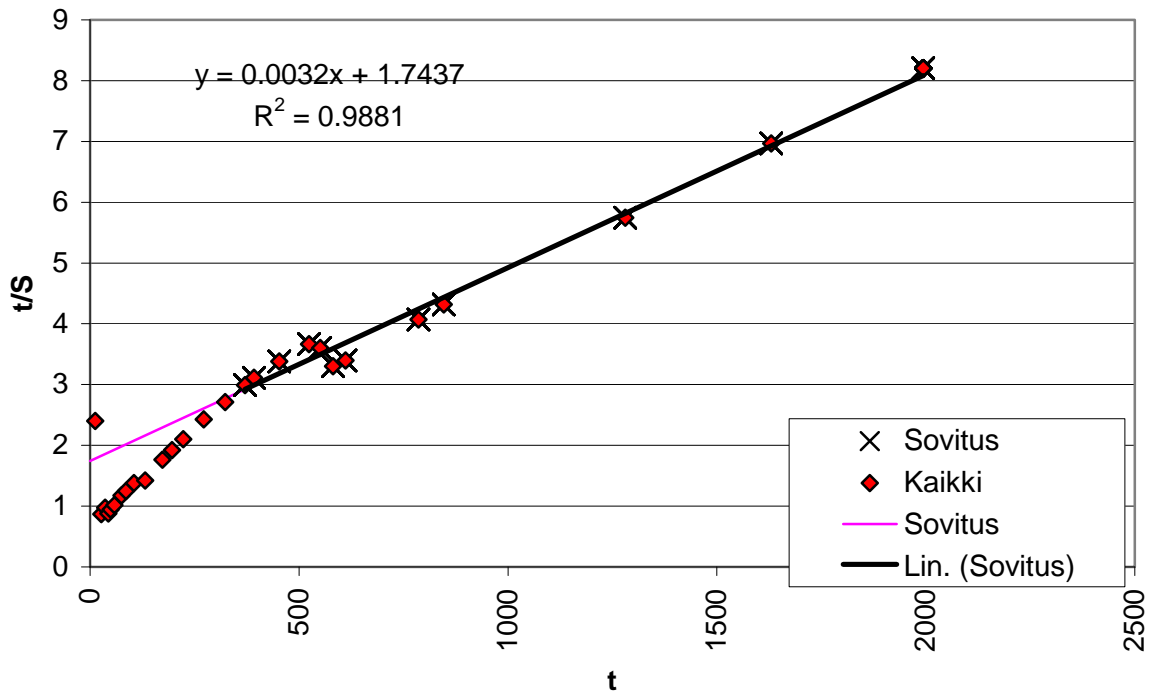


Aika-Painuma kuvaaja

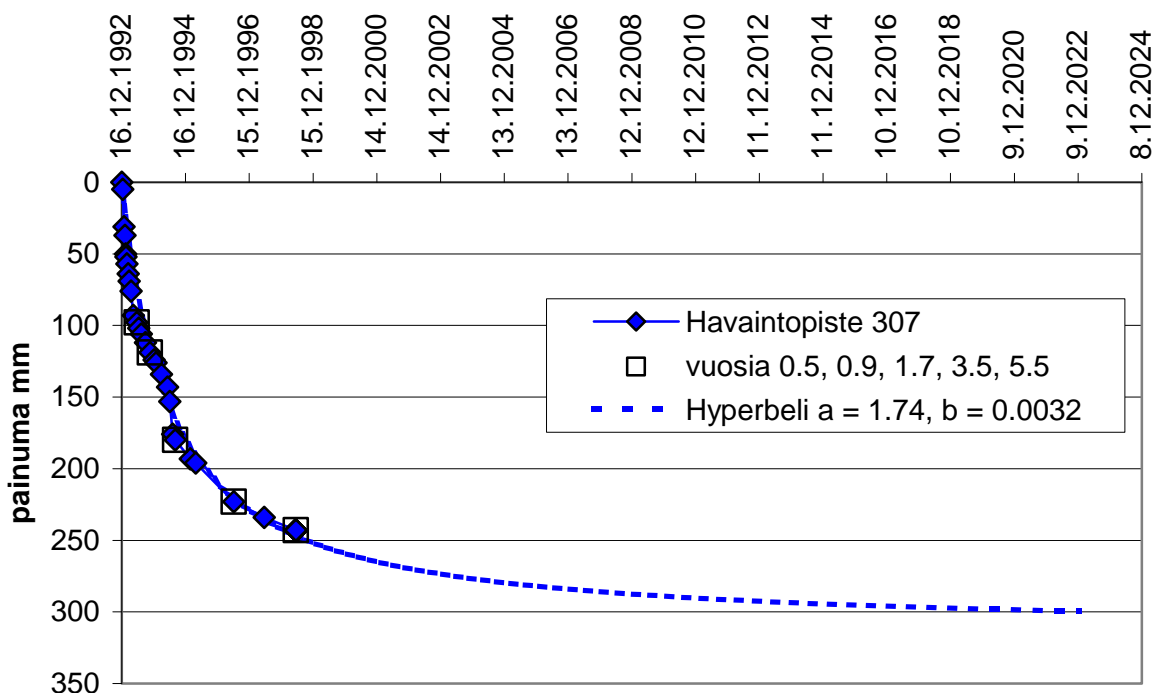
				pain. t (a)	tod. t	
				30	30.14	
input			output			
	β_0	β_1	t	Prim. Pain.	pain30.14	virh. mm
Asaoka	49.9	0.814	200.00	268	268	ei havaint.
	49.9	0.814	200.00			



Painumaennuste		Hyperbeli		LIITE XI / s. 9	
Pikku-Huopalahti, Tilkan stab. 6,5 v				Havaintopiste 307	
				pain. t (a)	tod. t
				30	30
input			output		
	a	b	Painuma		virh. mm
Hyperbeli	1.74	3.18E-03	314	299	ei havaint.



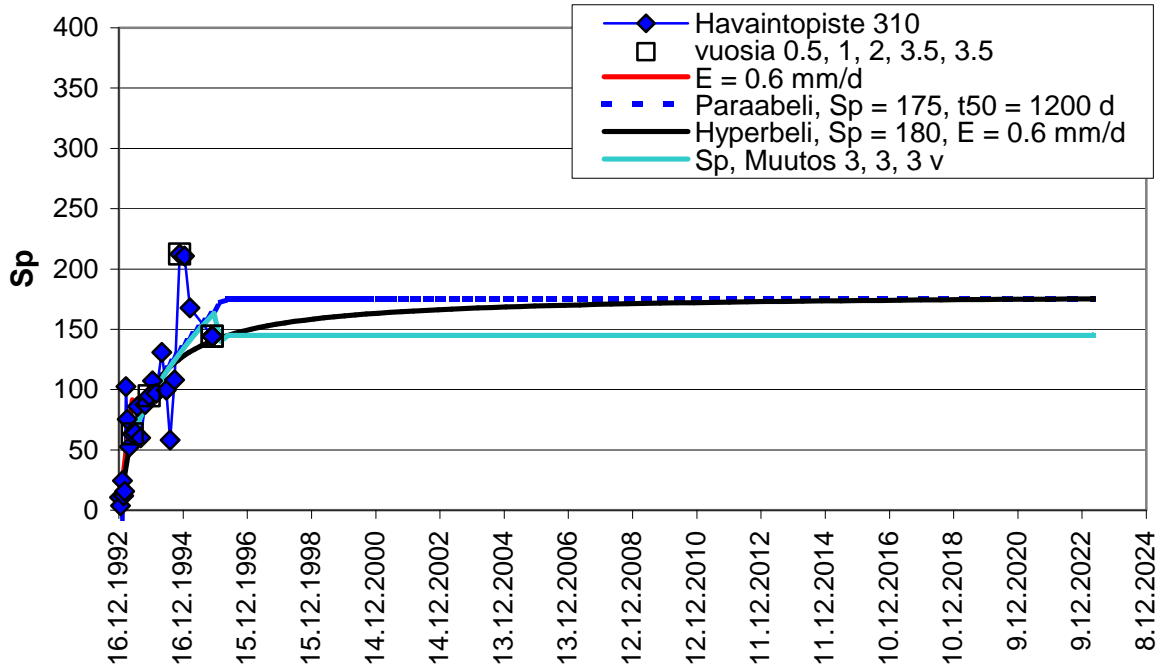
Aika-Painuma kuvaaja



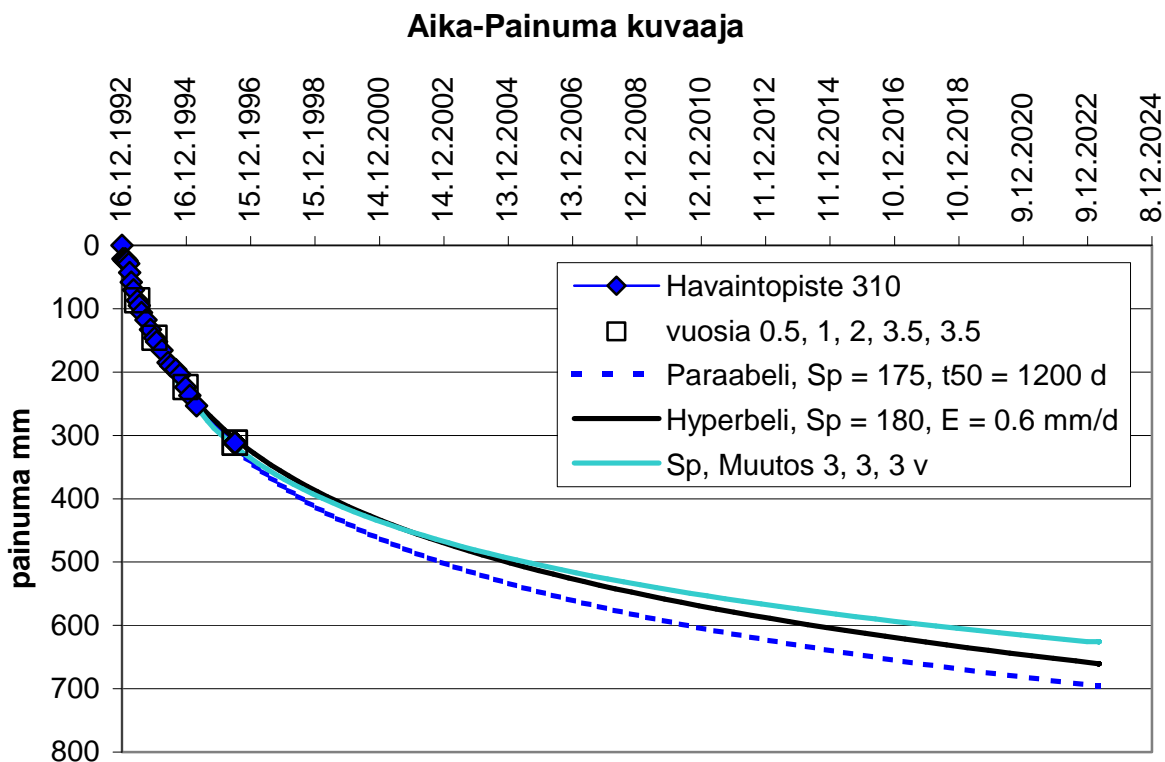
Pikku-Huopalahti, Tilkan stab. 6,5 v

Havaintopiste 310

○ 1-puol. kl	H	w	m (b = 0)	m	alkupai.	t0 (d)	pain. t (a)	tod. t
● 2-puol. kl	17	90	6...10.1	5	60	105	30	30
input				80				
0	Sp	t50/E	rs	B	c _v	pain. 30	virh. mm	
Paraabeli	175	1200	97	0.051	4.3	625	ei havaint.	
Hyperbeli	180	0.60	94	0.053		658	ei havaint.	

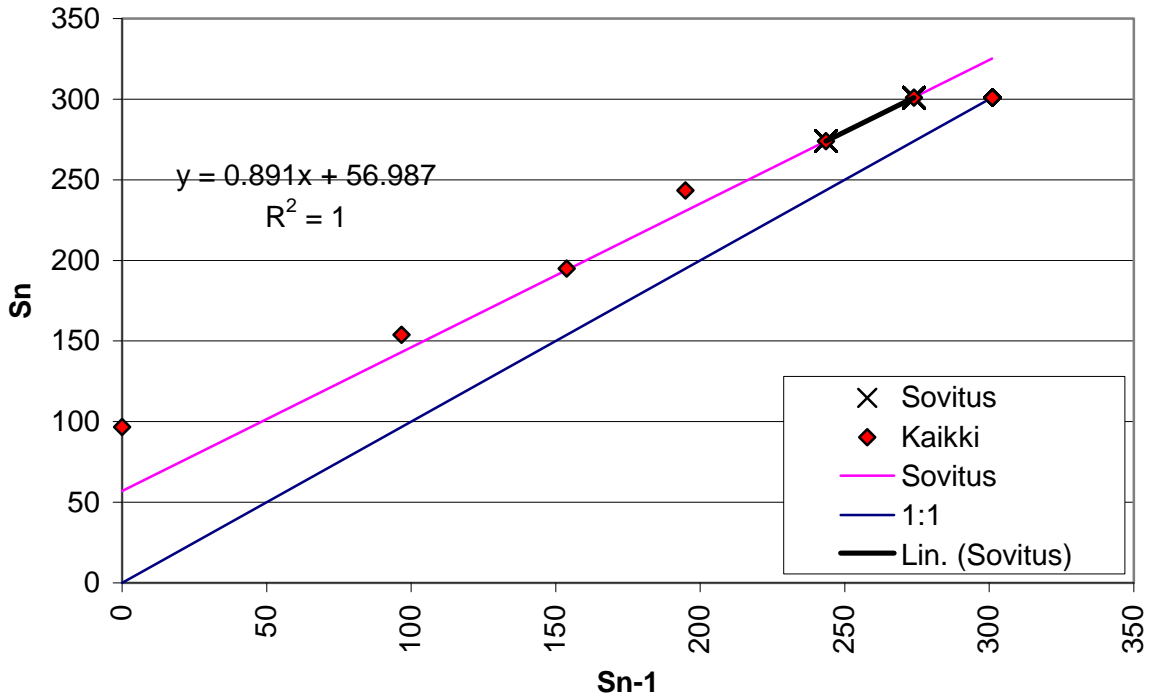


Aika-Painumapotentiaali kuvaaja

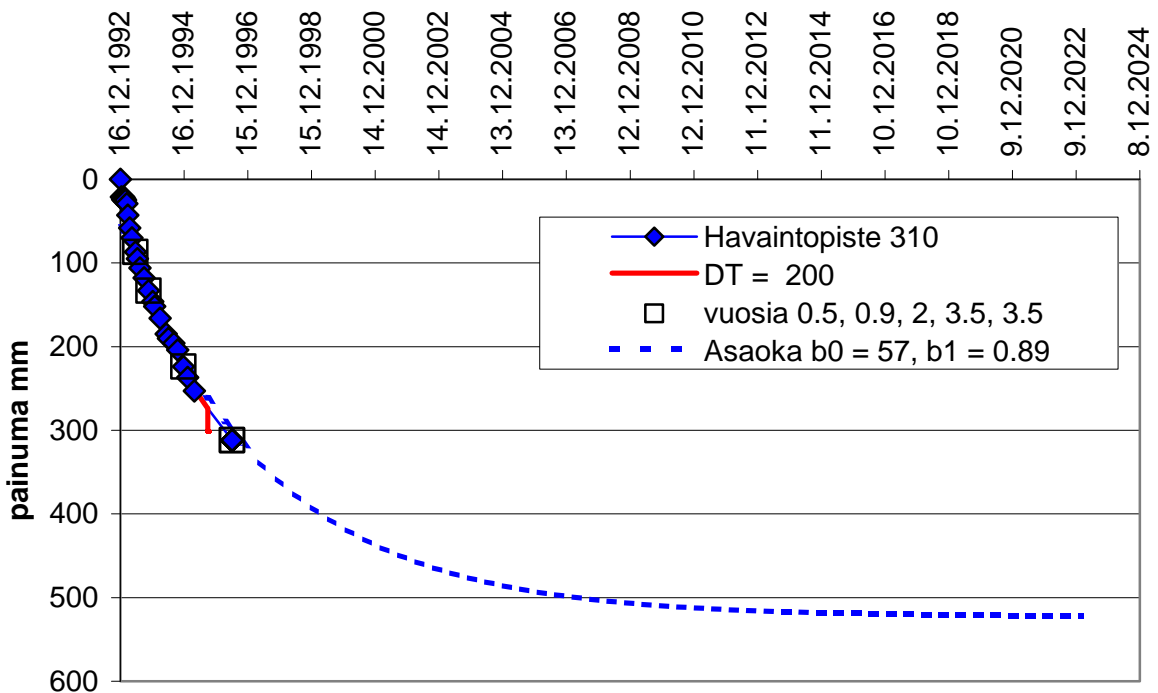


Aika-Painuma kuvaaja

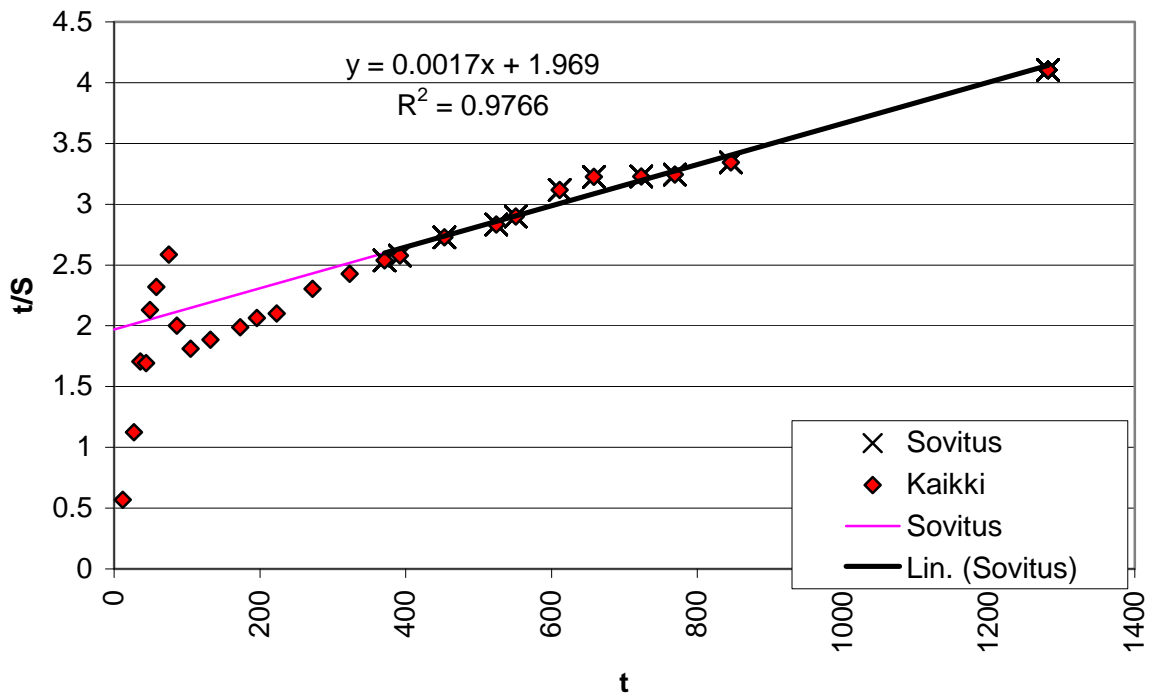
Painumaennuste		Asaoka		LIITE XI / s. 11		
Pikku-Huopalahti, Tilkan stab. 6,5 v				Havaintopiste 310		
				pain. t (a)	tod. t	
				30	30.14	
input			output			
	β_0	β_1	t	Prim. Pain.	pain30.14	virh. mm
Asaoka	57.0	0.891	200.00	523	522	ei havaint.
	57.0	0.891	200.00			



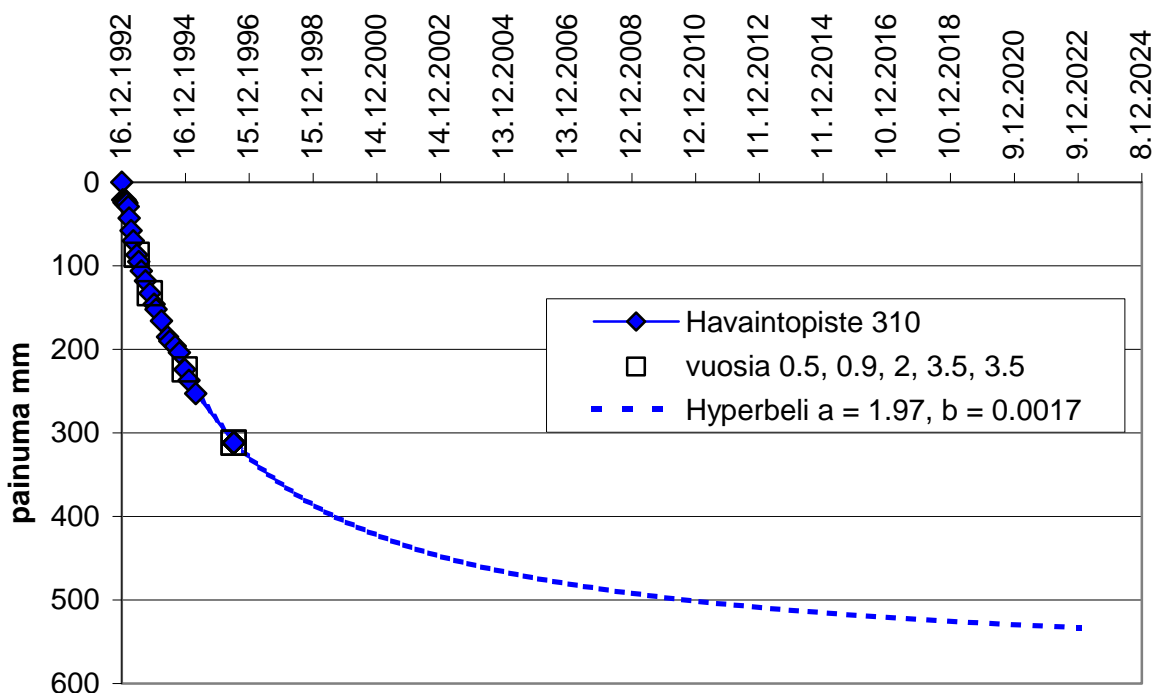
Aika-Painuma kuvaaja



Painumaennuste		Hyperbeli		LIITE XI / s. 12	
Pikku-Huopalahti, Tilkan stab. 6,5 v				Havaintopiste 310	
				pain. t (a)	tod. t
				30	30
input			output		
	a	b	Painuma		virh. mm
Hyperbeli	1.97	1.70E-03	590	533	ei havaint.



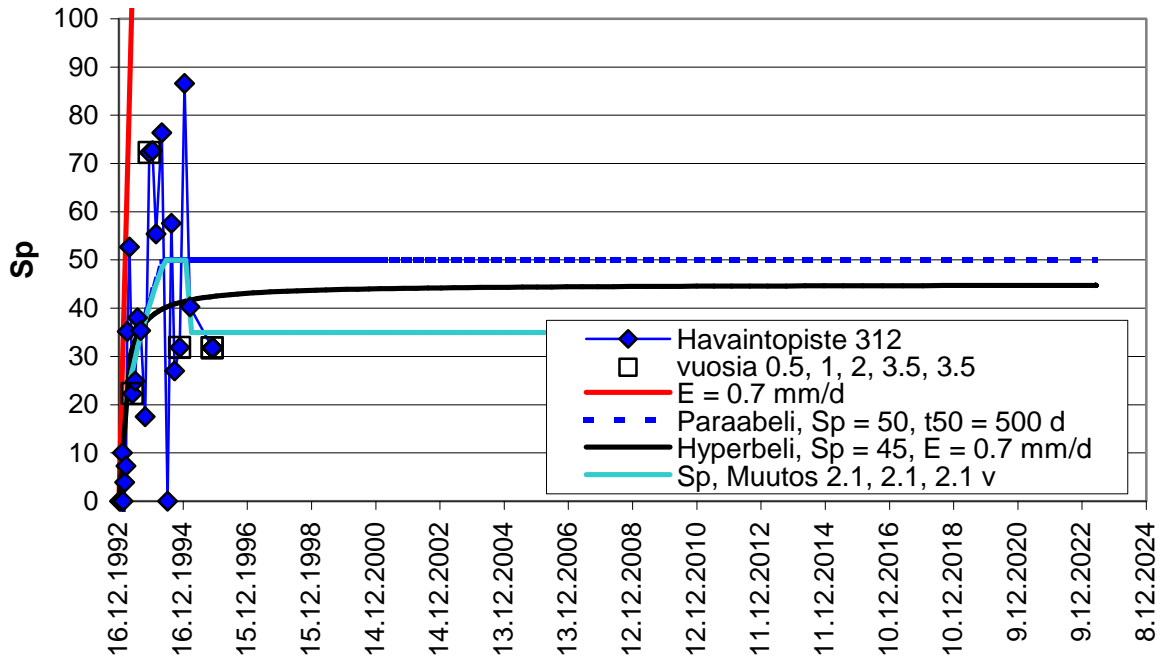
Aika-Painuma kuvaaja



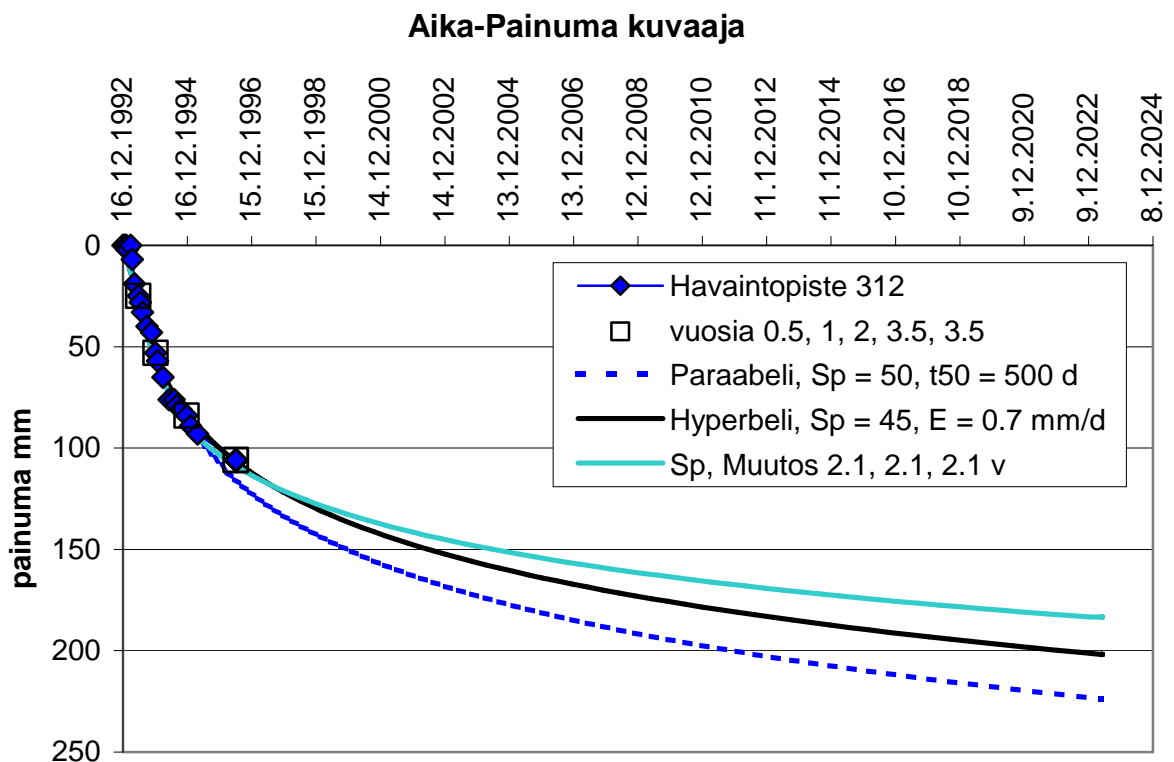
Pikku-Huopalahti, Tilkan stab. 6,5 v

Havaintopiste 312

○ 1-puol. kl	H	w	m (b = 0)	m	alkupai.	t0 (d)	pain. t (a)	tod. t
● 2-puol. kl	13	90	6...10.1	5	20	132	30	30
input				80				
0	Sp	t50/E	rs	B	c _v	pain. 30	virh. mm	
Paraabeli	50	500	260	0.019	6.0	183	ei havaint.	
Hyperbeli	45	0.70	289	0.017		201	ei havaint.	

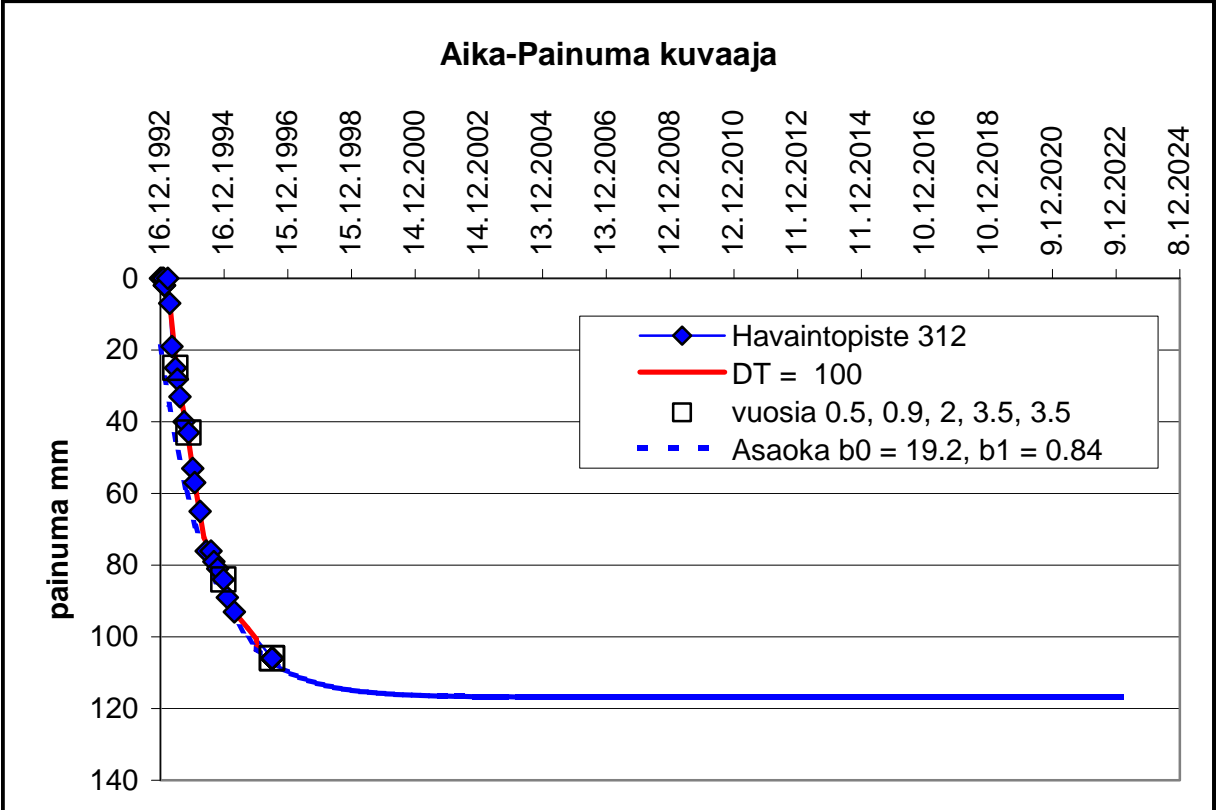
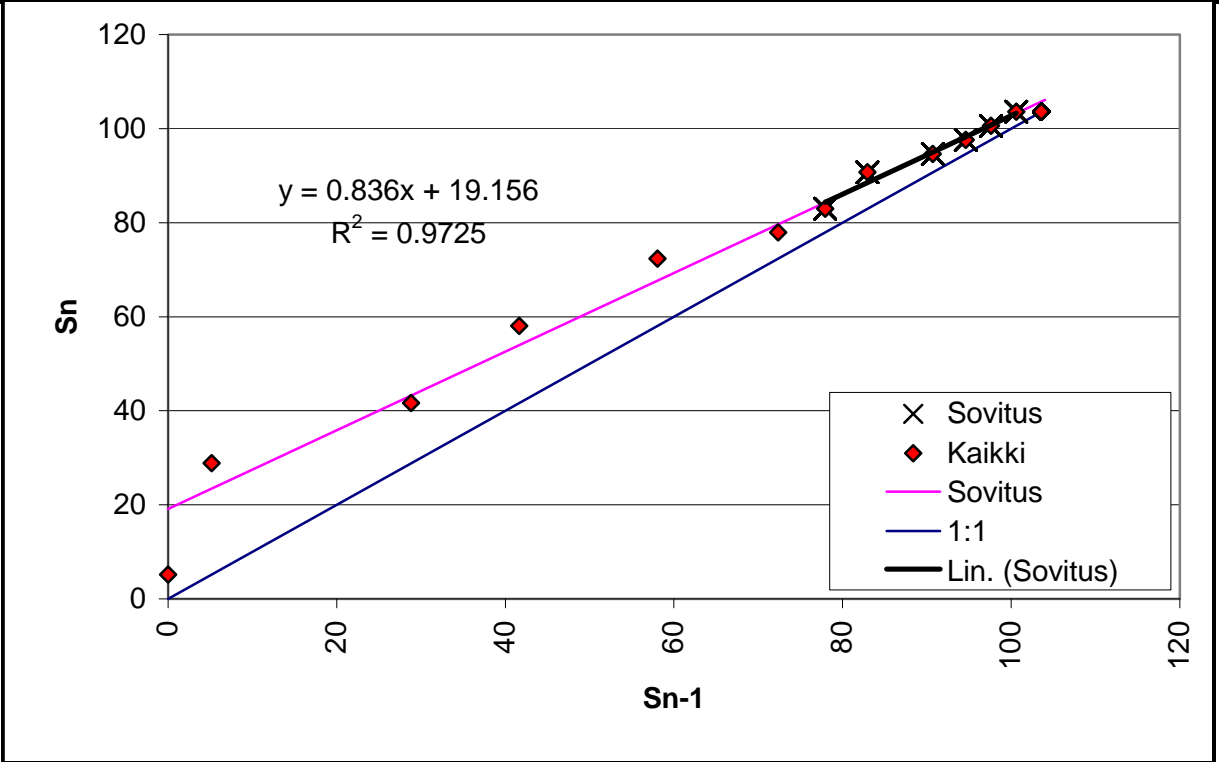


Aika-Painumapotentiaali kuvaaja

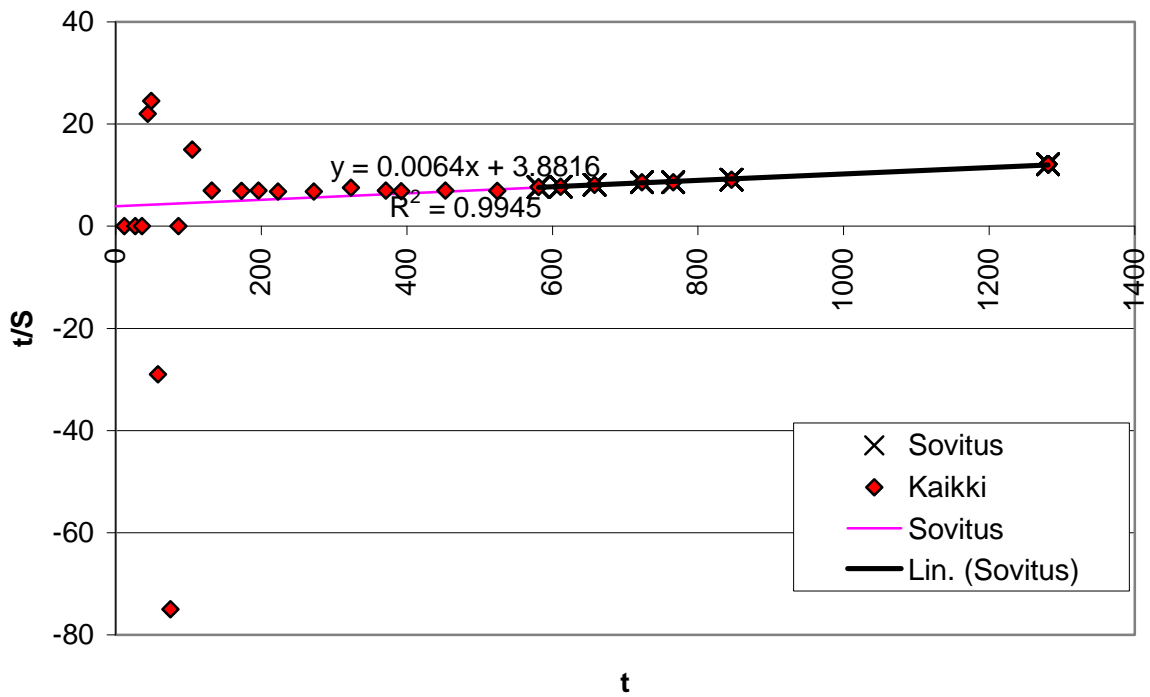


Aika-Painuma kuvaaja

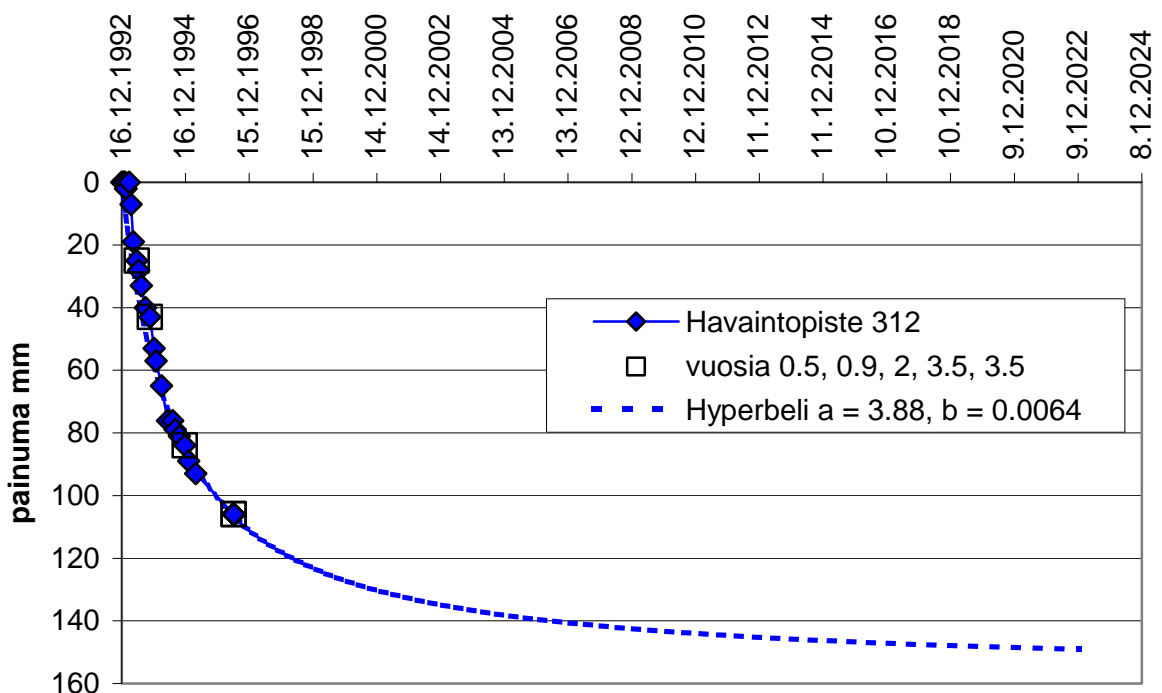
				pain. t (a)	tod. t	
				30	30.14	
input			output			
	β_0	β_1	t	Prim. Pain.	pain30.14	virh. mm
Asaoka	19.2	0.836	100.00	117	117	ei havaint.
	19.2	0.836	100.00			



Painumaennuste		Hyperbeli		LIITE XI / s. 15	
Pikku-Huopalahti, Tilkan stab. 6,5 v				Havaintopiste 312	
				pain. t (a)	tod. t
				30	30
input			output		
	a	b	Painuma		virh. mm
Hyperbeli	3.88	6.35E-03	157	149	ei havaint.



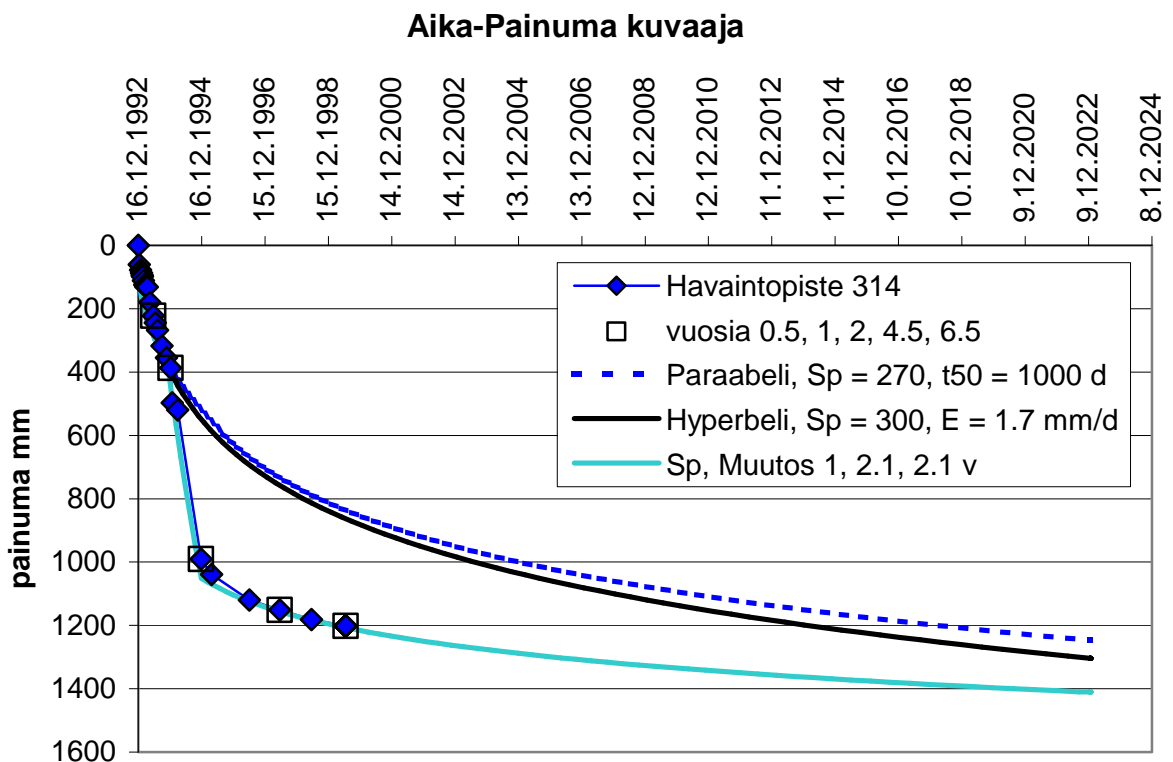
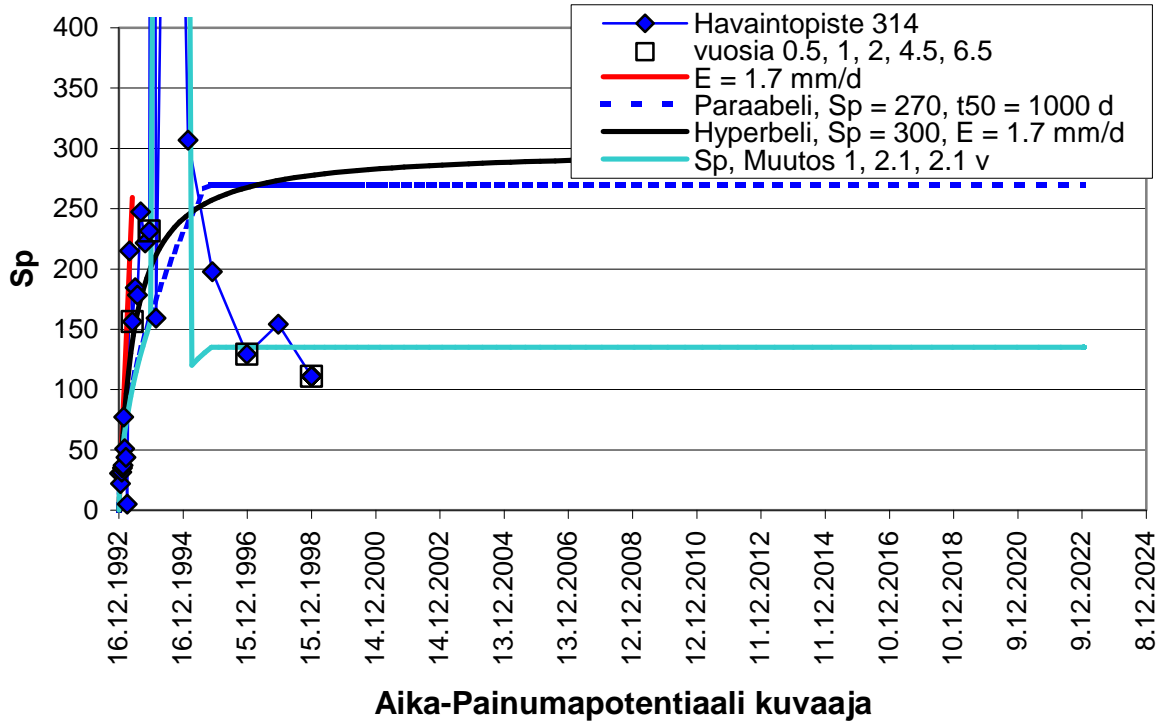
Aika-Painuma kuvaaja



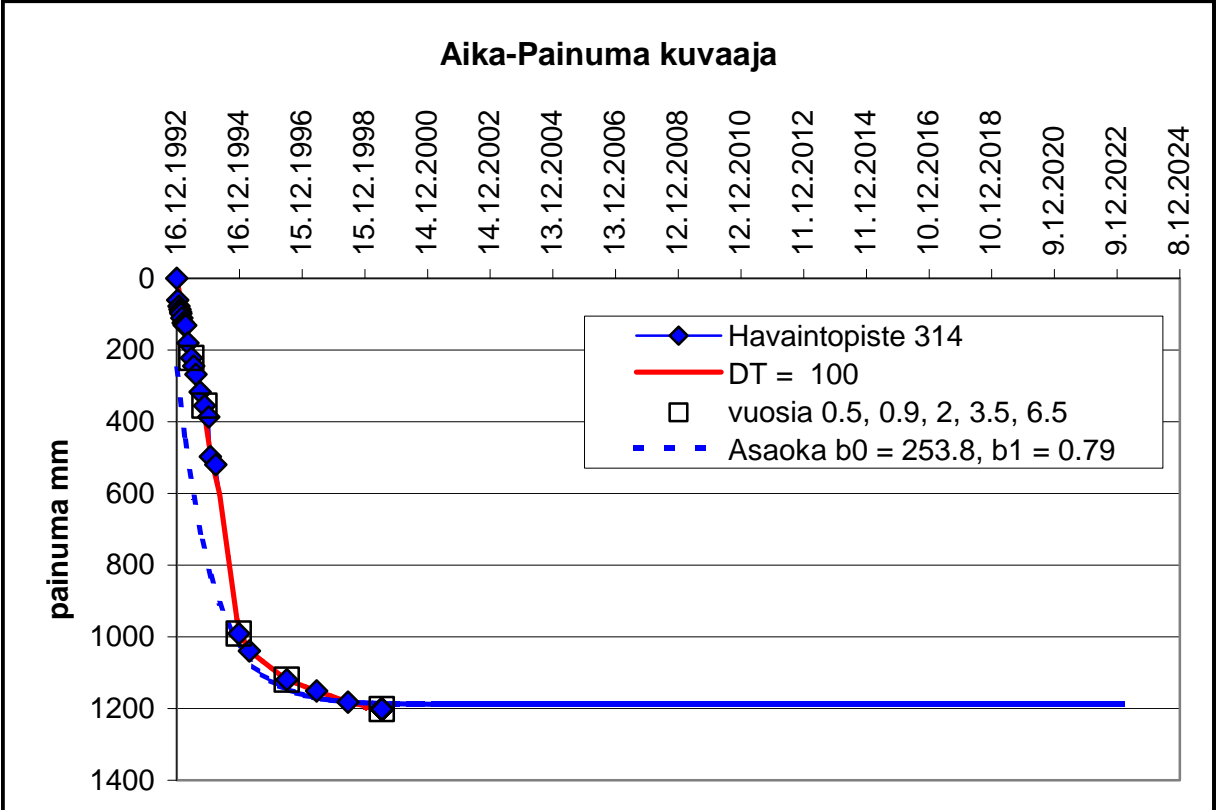
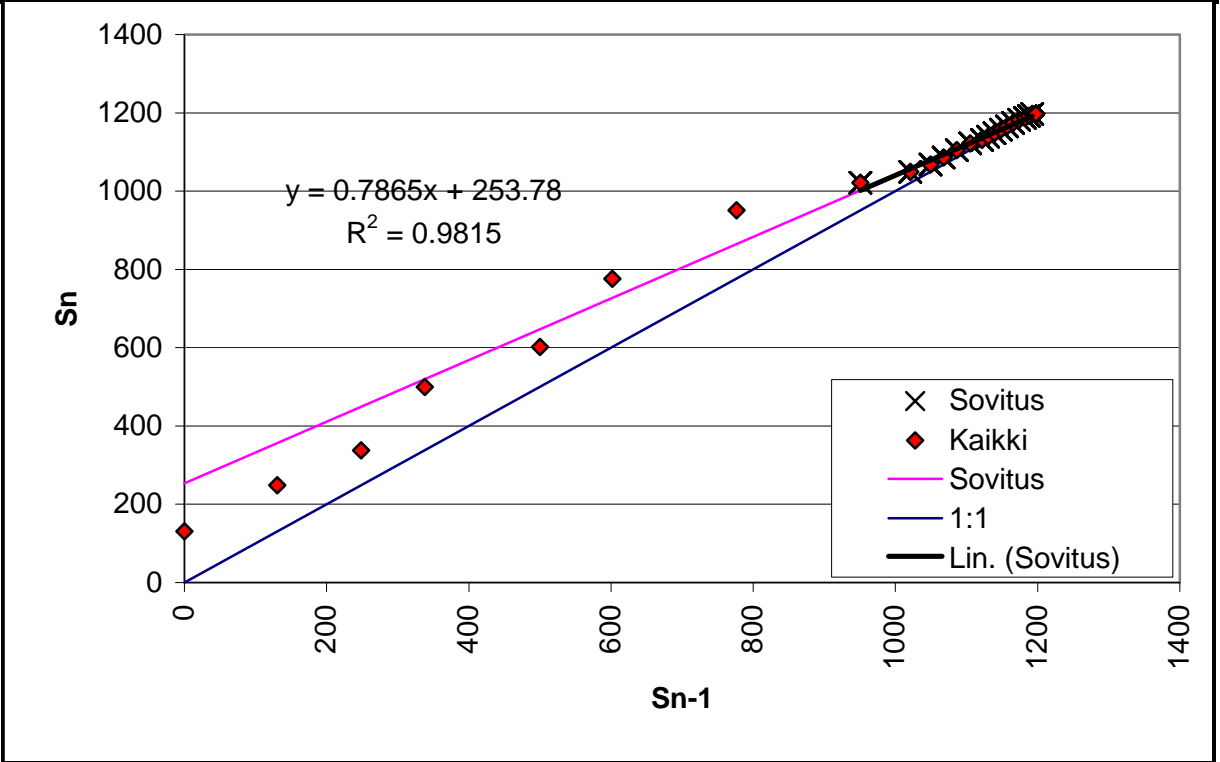
Pikku-Huopalahti, Tilkan stab. 6,5 v

Havaintopiste 314

○ 1-puol. kl.	H	w	m (b = 0)	m	alkupai.	t0 (d)	pain. t (a)	tod. t
● 2-puol. kl.	12	90	6...10.1	5	60	0	30	30
input				80				
0	Sp	t50/E	rs	B	c _v	pain. 30	virh. mm	
Paraabeli	270	1000	44	0.113	2.6	1409	ei havaint.	
Hyperbeli	300	1.70	40	0.125		1303	ei havaint.	

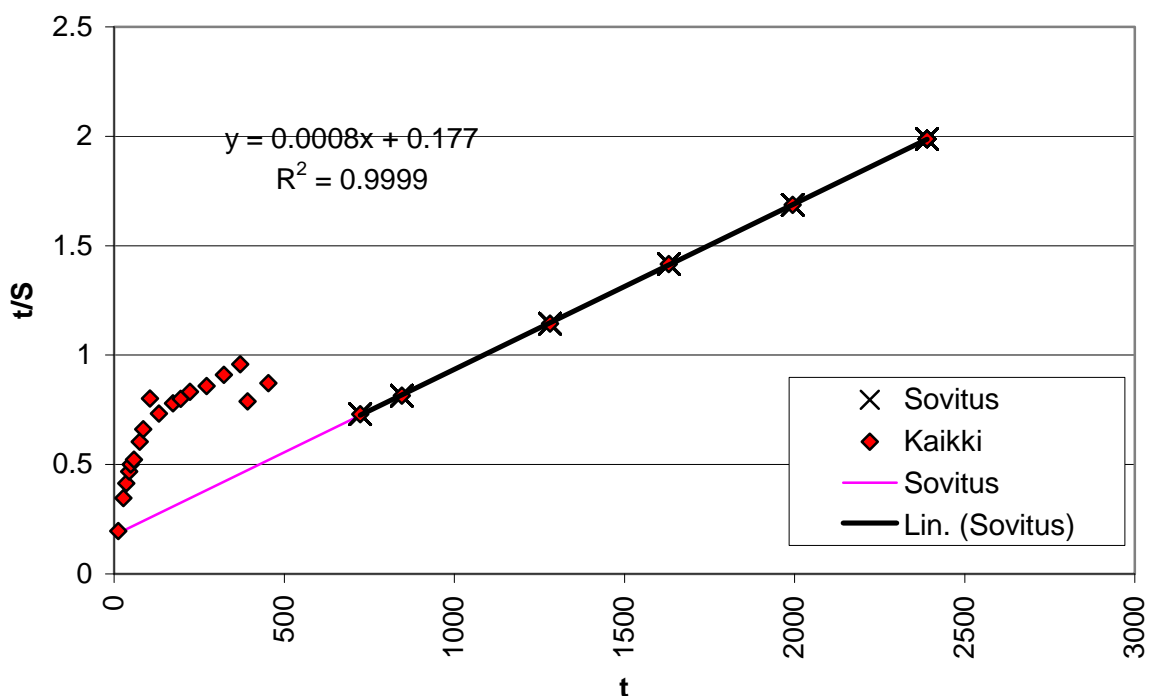


				pain. t (a)	tod. t	
				30	30.14	
input			output			
	β_0	β_1	t	Prim. Pain.	pain30.14	virh. mm
Asaoka	253.8	0.787	100.00	1189	1189	ei havaint.
	253.8	0.787	100.00			

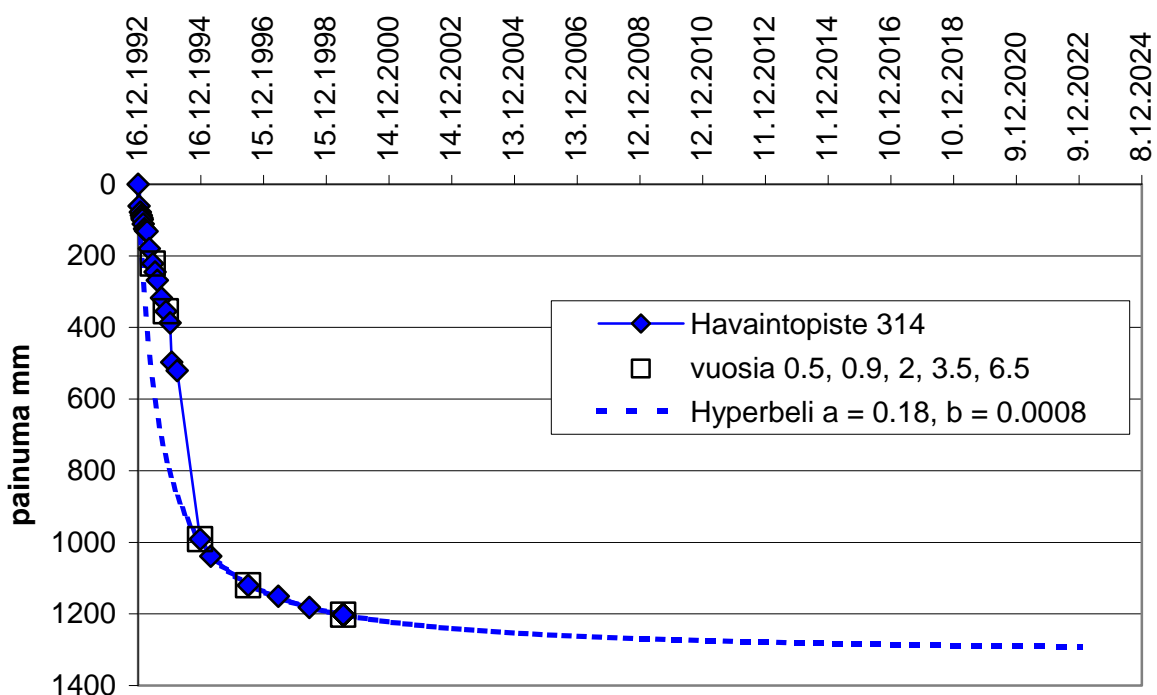




				pain. t (a)	tod. t	
				30	30	
input			output			
	a	b	Painuma		pain30	virh. mm
Hyperbeli	0.18	7.58E-04	1320		1292	ei havaint.



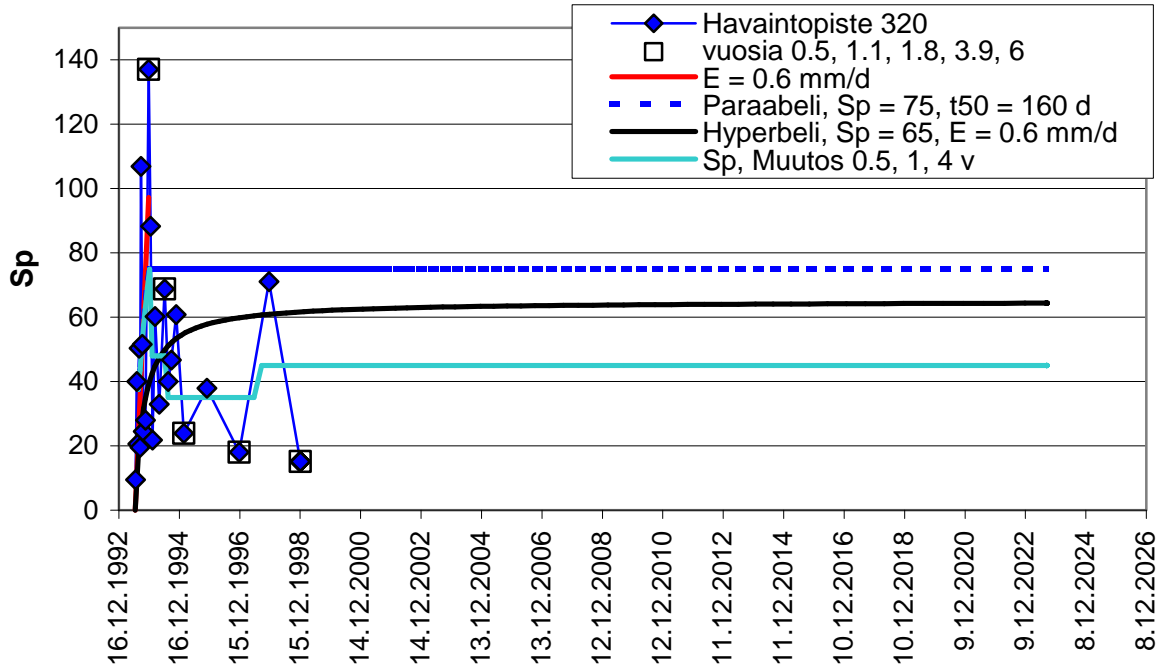
Aika-Painuma kuvaaja



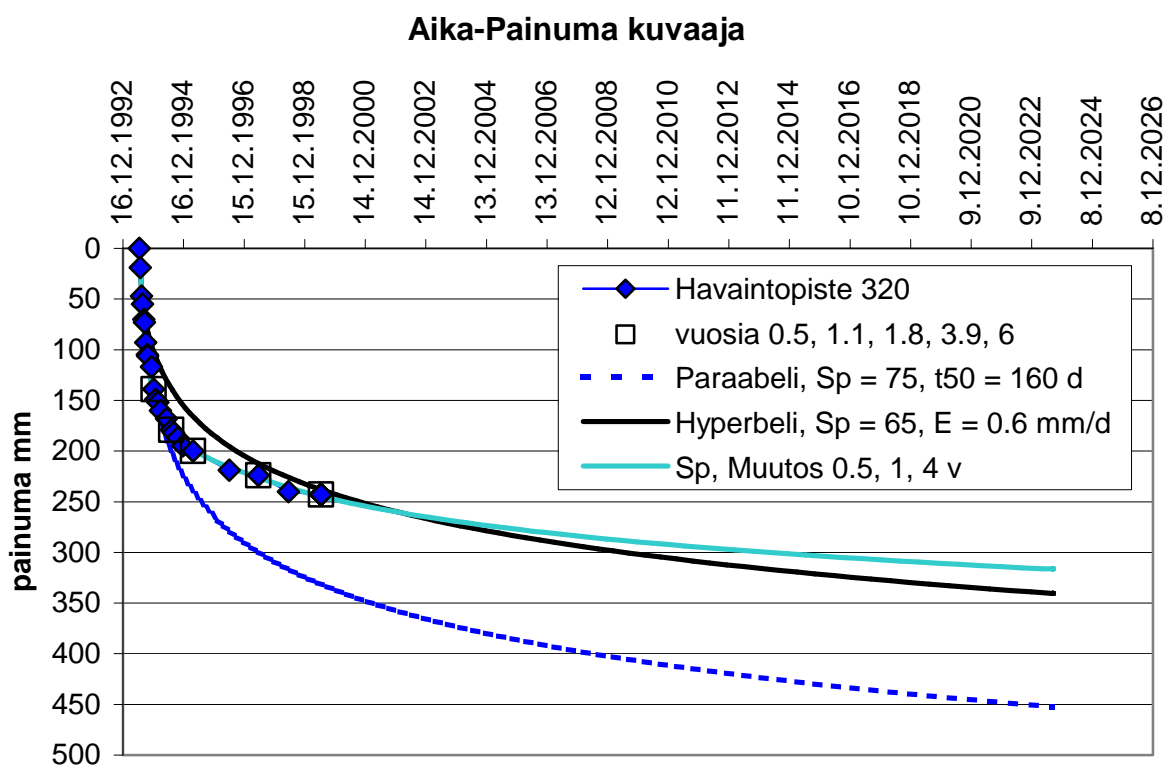
Pikku-Huopalahti, Tilkan stab. 6,5 v

Havaintopiste 320

○ 1-puol. kl	H	w	m (b = 0)	m	alkupai.	t0 (d)	pain. t (a)	tod. t
● 2-puol. kl	16	90	6...10.1	5	60	40	30	30
input				80				
0	Sp	t50/E	rs	B	c _v	pain. 30	virh. mm	
Paraabeli	75	160	213	0.023	28.6	316	ei havaint.	
Hyperbeli	65	0.60	246	0.020			ei havaint.	



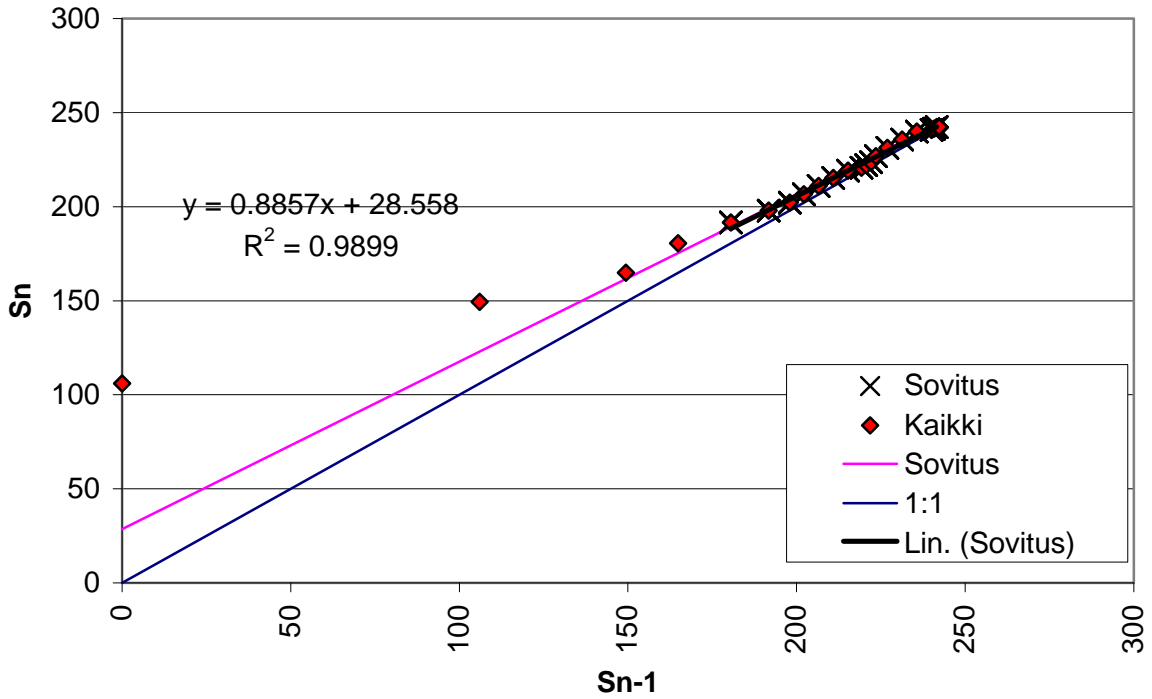
Aika-Painumapotentiaali kuvaaja



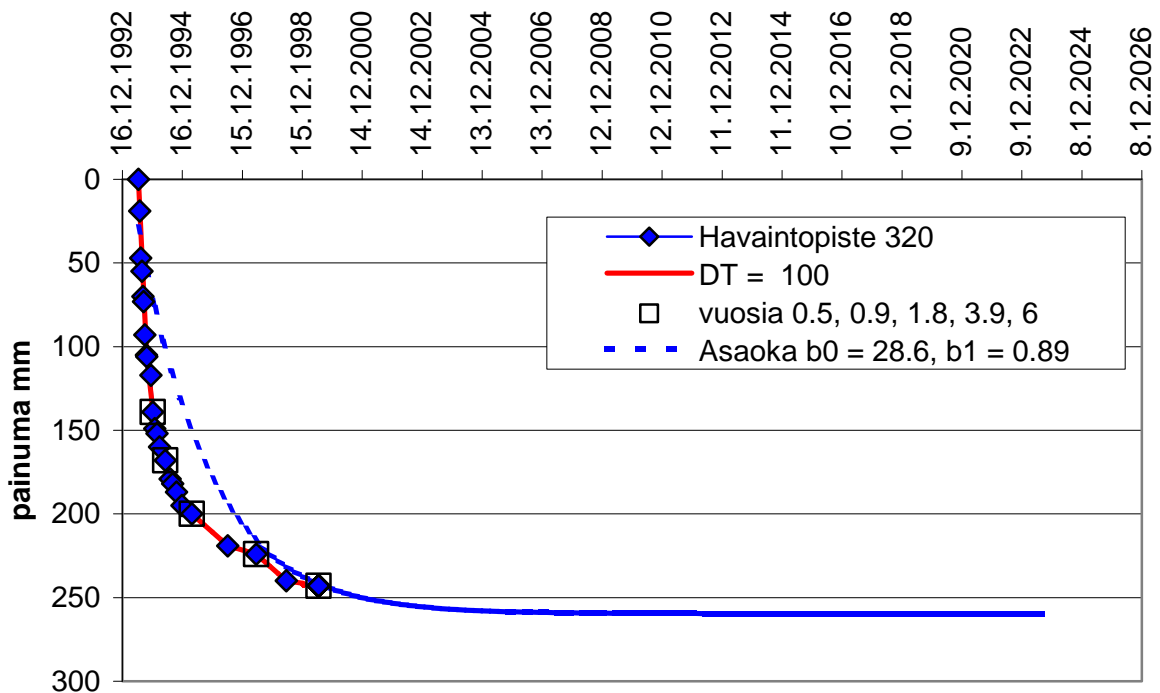
Aika-Painuma kuvaaja



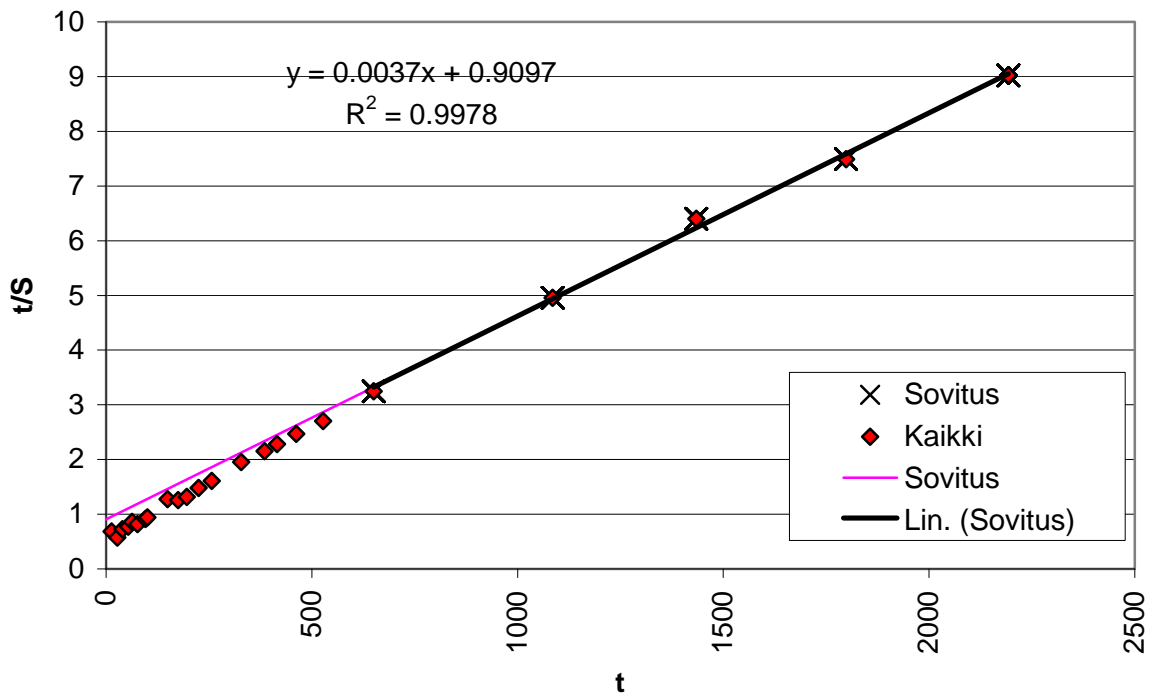
				pain. t (a)	tod. t
				30	30.14
input			output		
	β_0	β_1	t	Prim. Pain.	virh. mm
Asaoka	28.6	0.890	100.00	260	ei havaint.
	28.6	0.890	100.00		



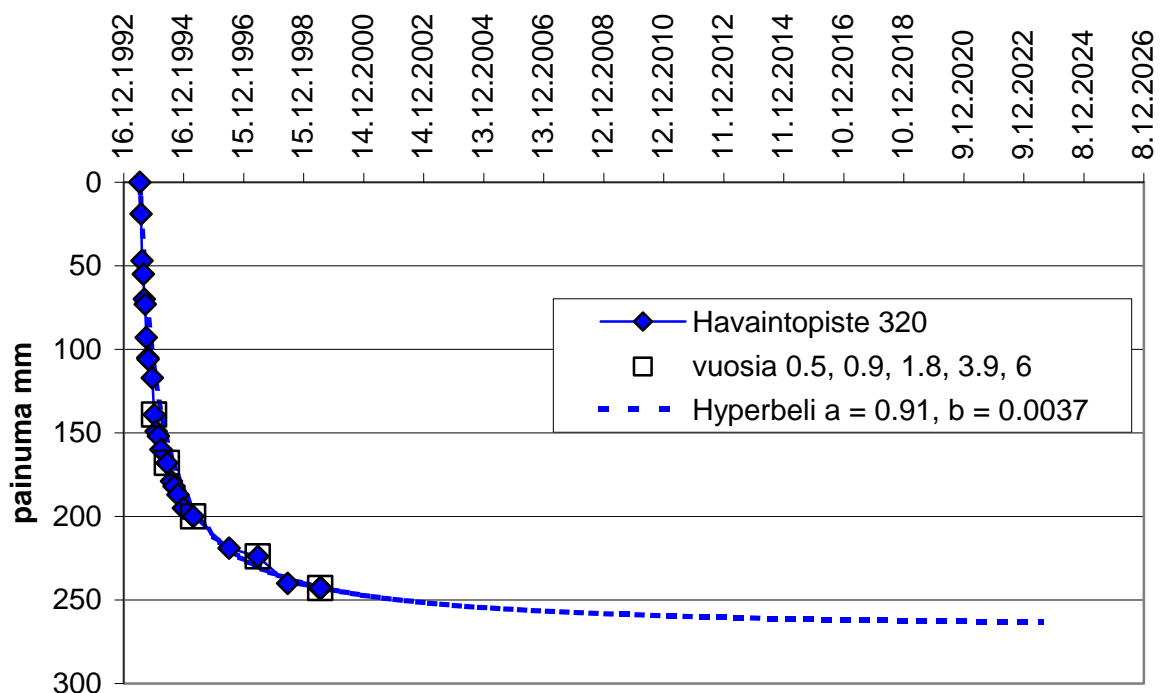
Aika-Painuma kuvaaja



Painumaennuste		Hyperbeli		LIITE XI / s. 21	
Pikku-Huopalahti, Tilkan stab. 6,5 v				Havaintopiste 320	
				pain. t (a)	tod. t
				30	30
input			output		
	a	b	Painuma	pain30	virh. mm
Hyperbeli	0.91	3.71E-03	269	263	ei havaint.



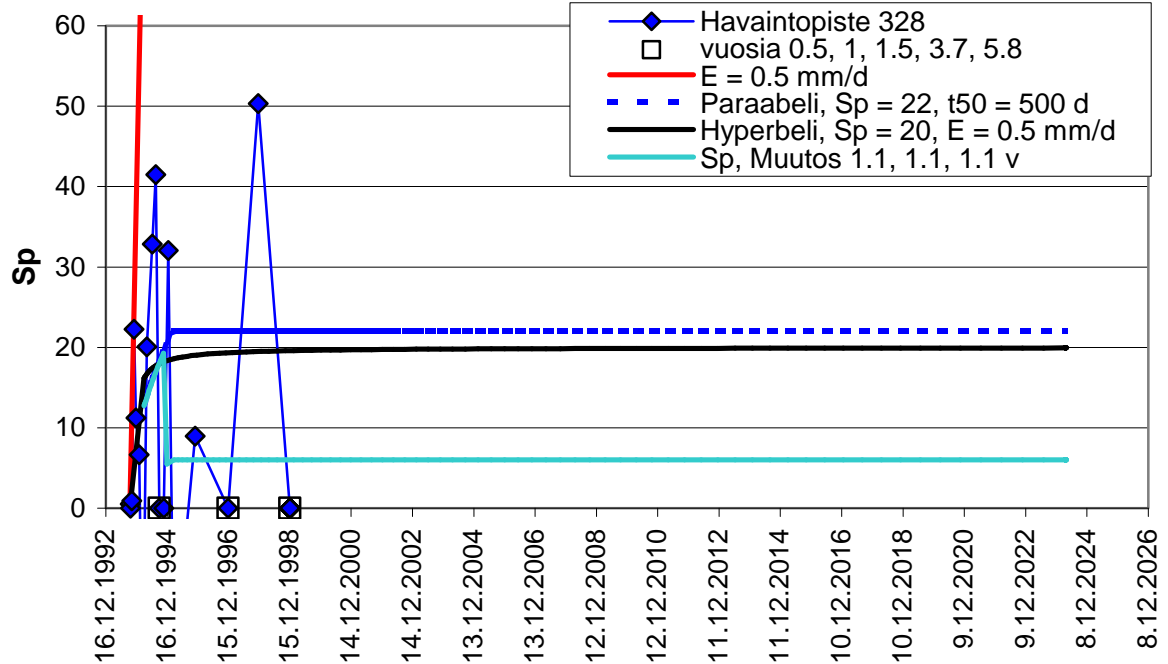
Aika-Painuma kuvaaja



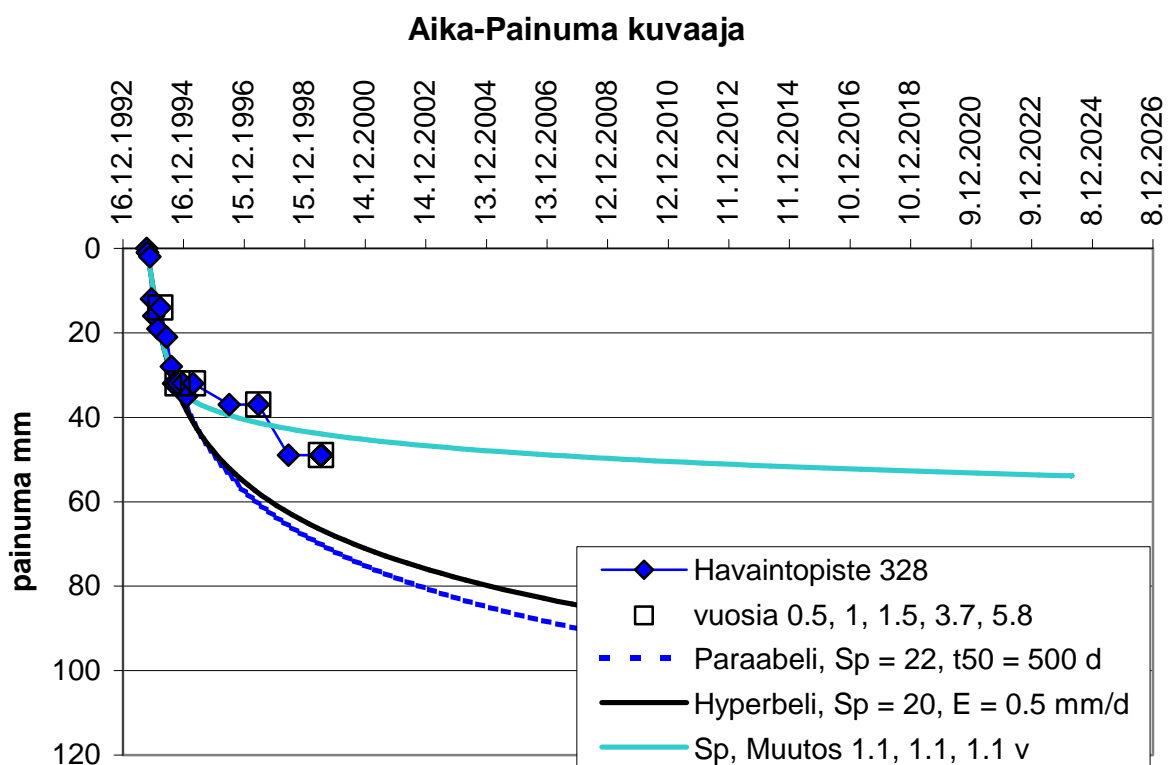
Pikku-Huopalahti, Tilkan stab. 6,5 v

Havaintopiste 328

○ 1-puol. kl	H	w	m (b = 0)	m	alkupai.	t0 (d)	pain. t (a)	tod. t
● 2-puol. kl	9.5	90	6...10.1	5	20	168	30	30
input				80				
0	Sp	t50/E	rs	B	c _v	pain. 30	virh. mm	
Paraabeli	22	500	432	0.012	3.2	54	ei havaint.	
Hyperbeli	20	0.50	475	0.011			ei havaint.	



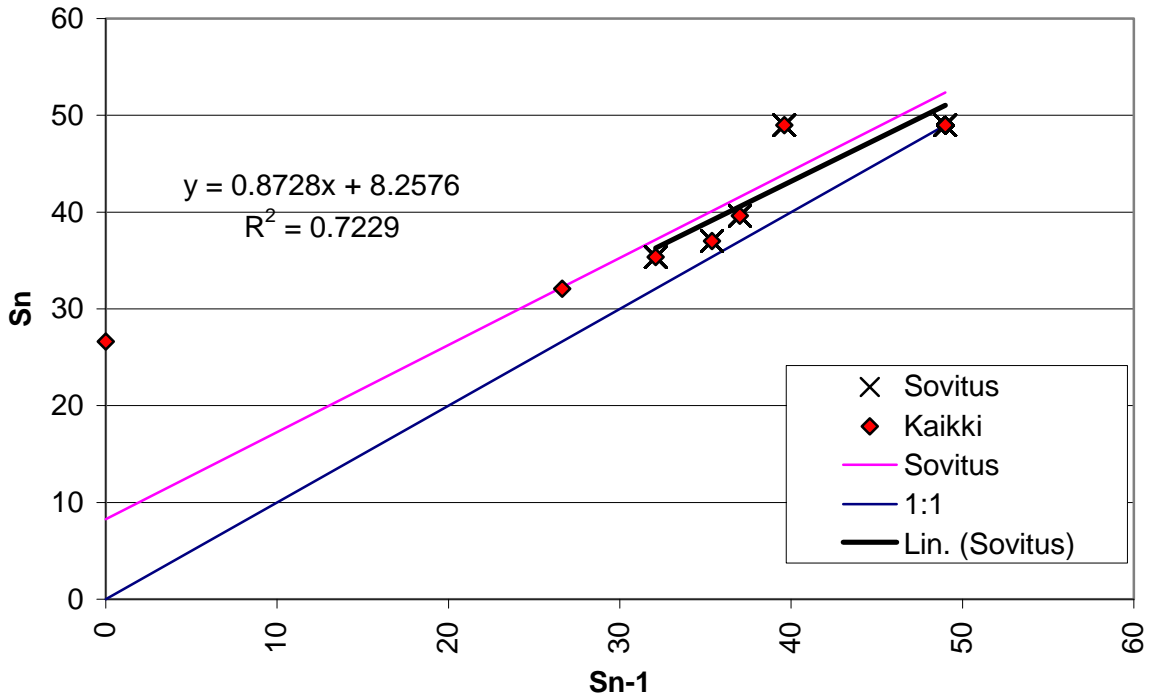
Aika-Painumapotentiaali kuvaaja



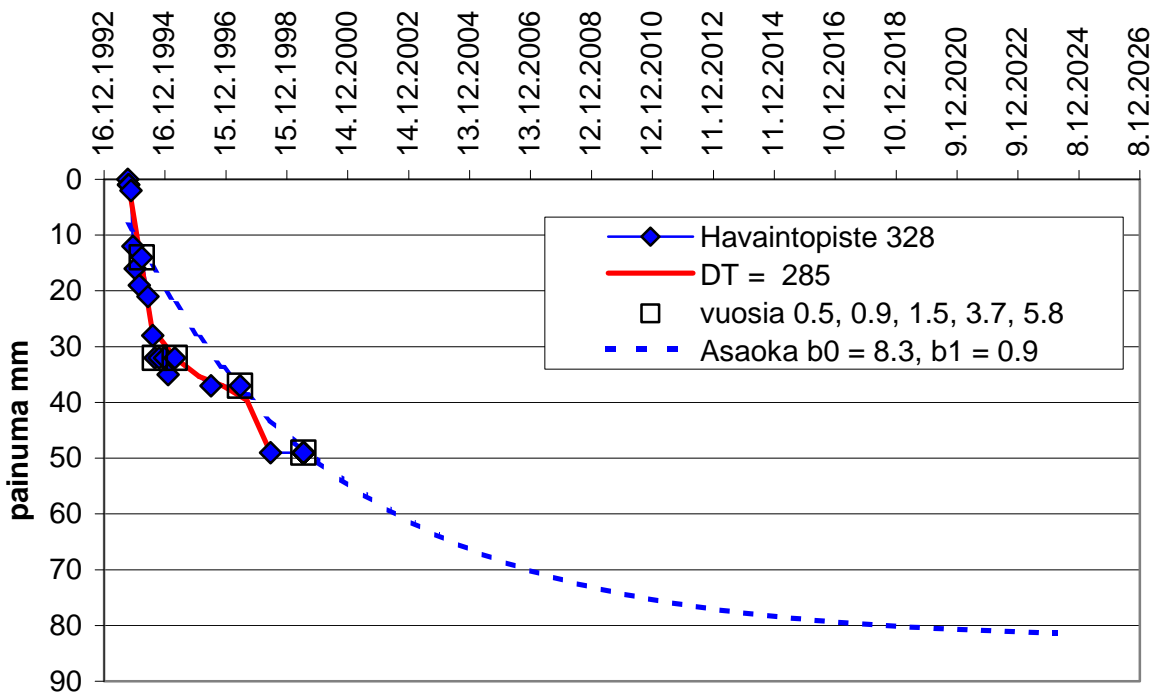
Aika-Painuma kuvaaja



				pain. t (a)	tod. t	
				30	29.65	
input			output			
	β_0	β_1	t	Prim. Pain.	pain29.65	virh. mm
Asaoka	8.3	0.900	284.83	83	81	ei havaint.
	8.3	0.900	284.83			

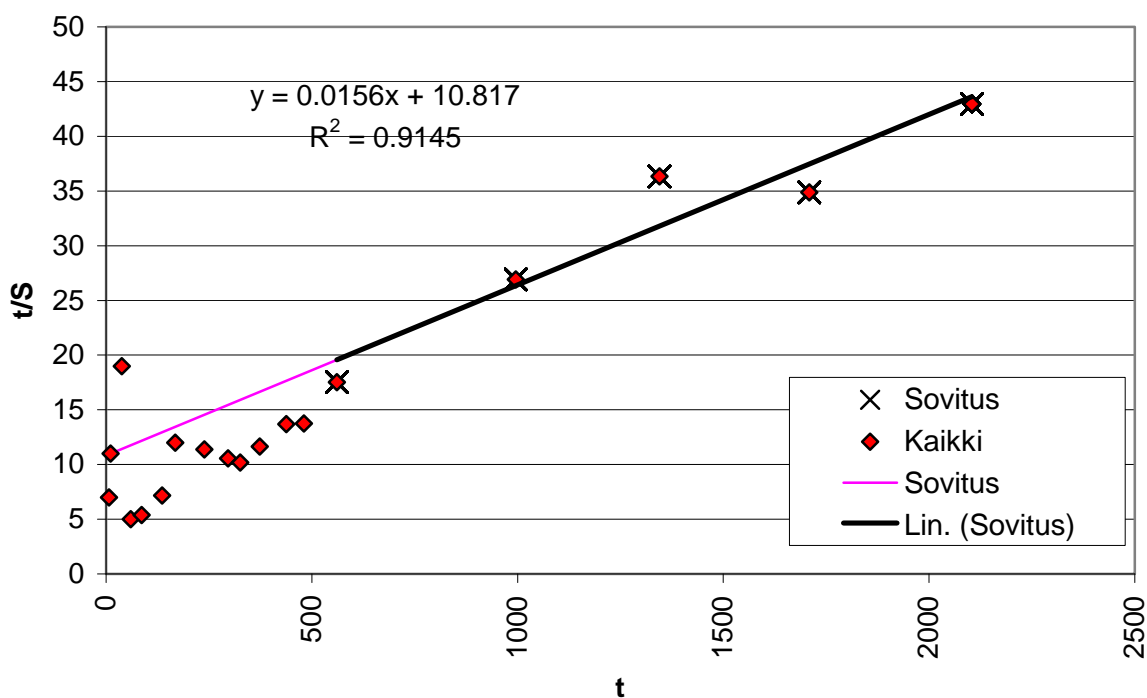


Aika-Painuma kuvaaja

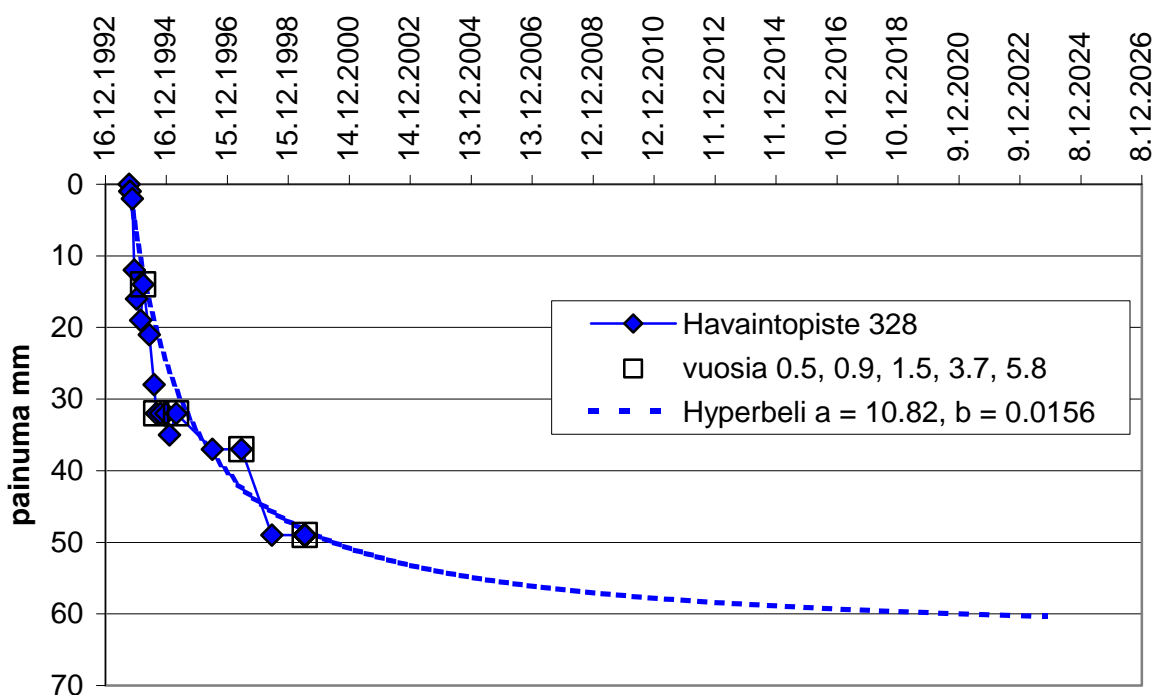




					pain. t (a)	tod. t
					30	30
input			output			
	a	b	Painuma		pain30	virh. mm
Hyperbeli	10.82	1.56E-02	64		60	ei havaint.



Aika-Painuma kuvaaja



Painumaennuste

Painumapotentiaali

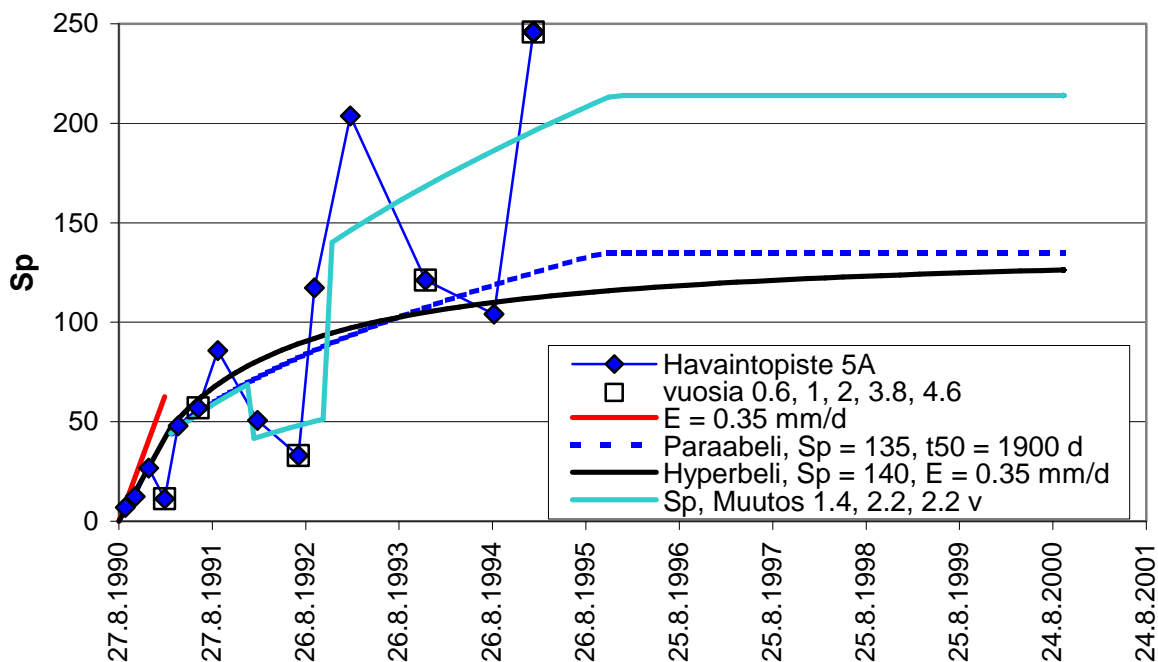
LIITE XII / s. 1

Pikku-Huopalahti, Korppaanmäentie 5 v

Havaintopiste 5A

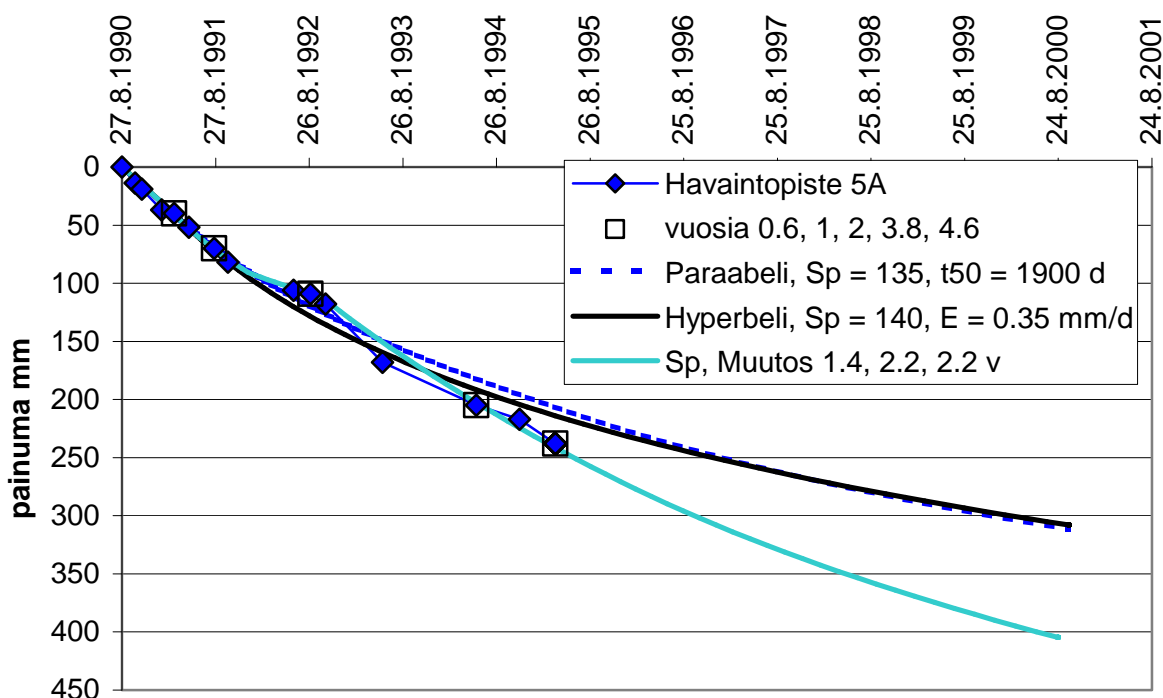


○ 1-puol. kl	H	w	m (b = 0)	m	alkupai.	t0 (d)	pain. t (a)	tod. t
● 2-puol. kl	10.2	100	5.4...9.1	6	40	203	8.8	8.8
input				80				
	Sp	t50/E	rs	B	c _v	pain. 8.8	virh. mm	
Paraabeli	135	1900	76	0.079	1.0	375 kev.	ei havaint.	
Hyperbeli	140	0.35	73	0.082		291	ei havaint.	



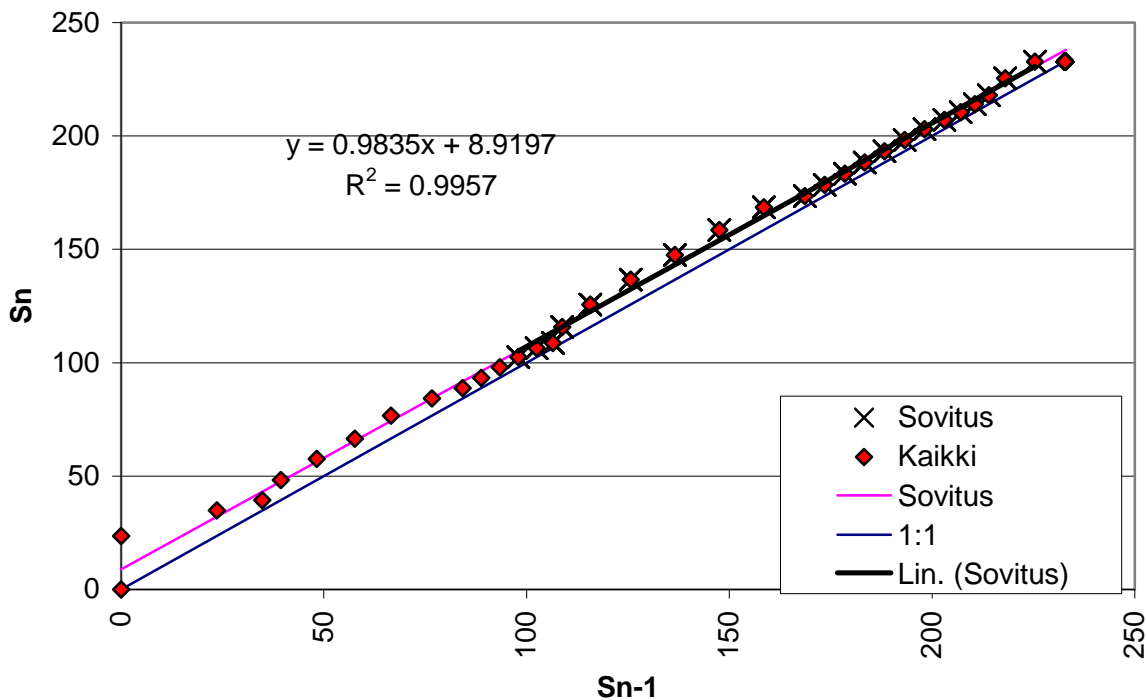
Aika-Painumapotentiaali kuvaaja

Aika-Painuma kuvaaja

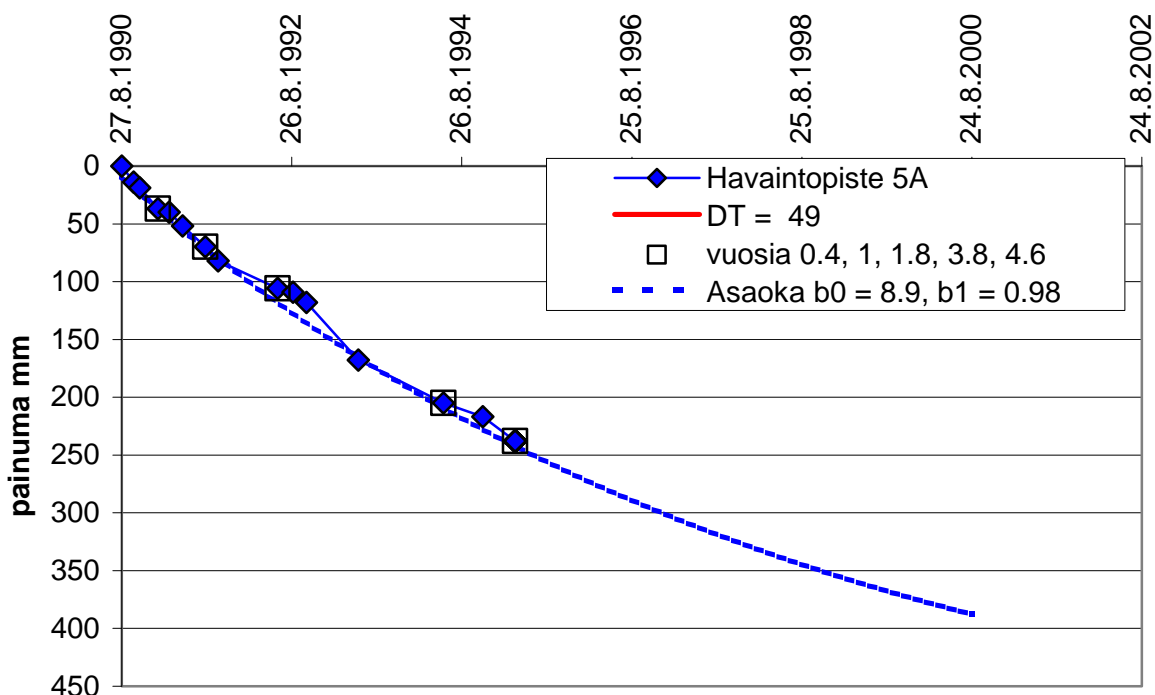




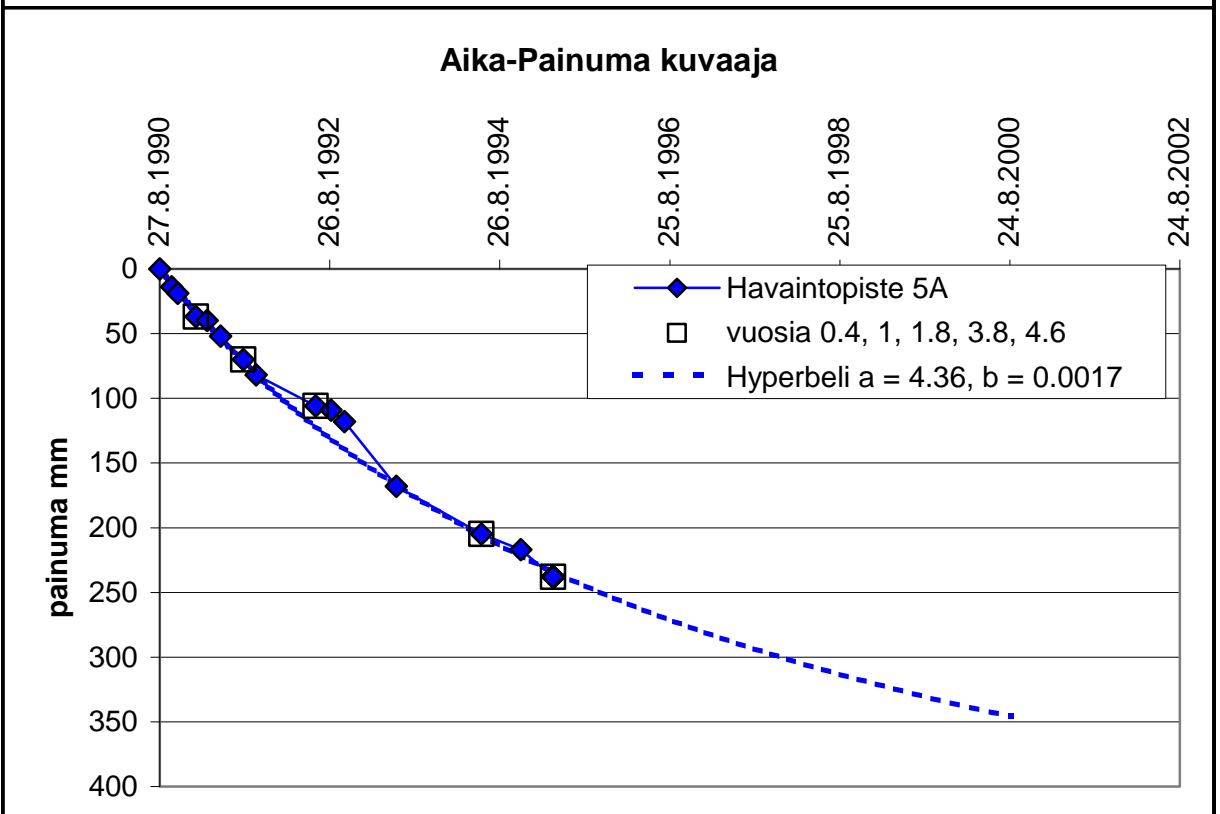
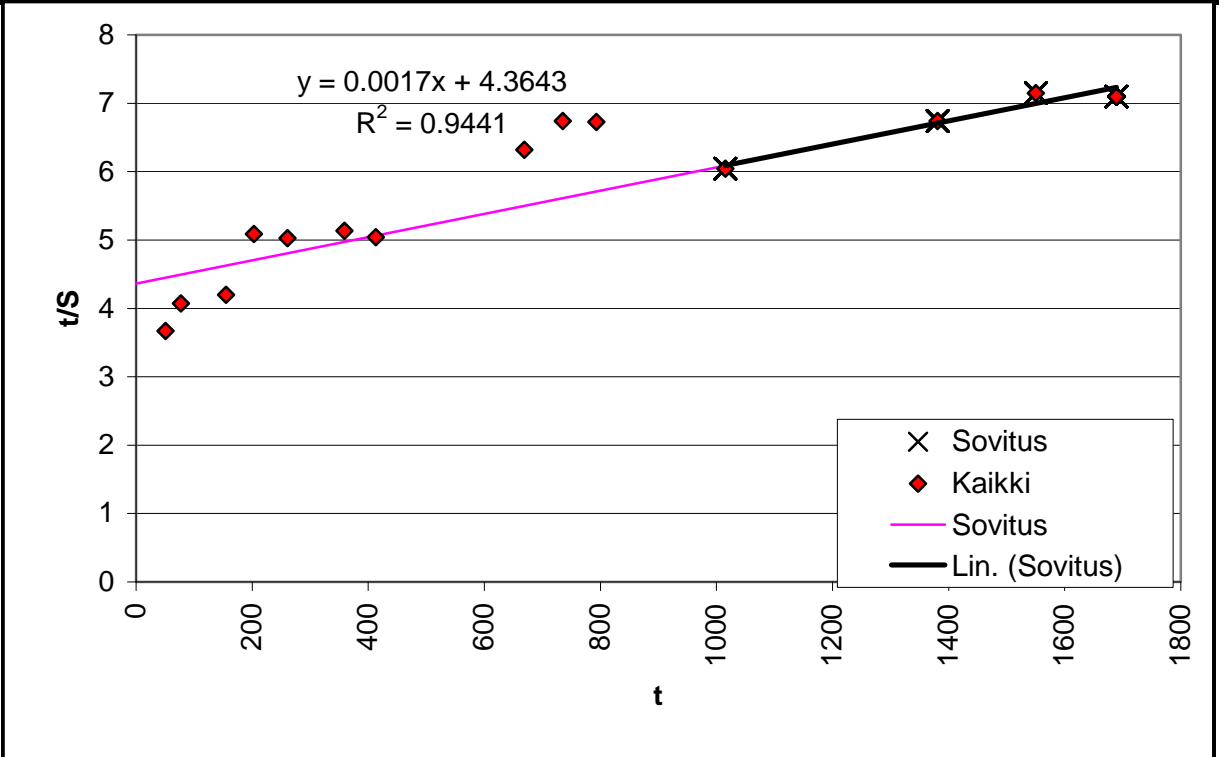
				pain. t (a)	tod. t	
				8.8	8.8	
input			output			
	β_0	β_1	t	Prim. Pain.	pain8.8	virh. mm
Asaoka	8.9	0.983	48.67	539	363	ei havaint.
	8.9	0.983	48.67			



Aika-Painuma kuvaaja



				pain. t (a)	tod. t
				8.8	8.8
input			output		
	a	b	Painuma	pain8.8	virh. mm
Hyperbeli	4.36	1.70E-03	589	327	ei havaint.



Painumaennuste

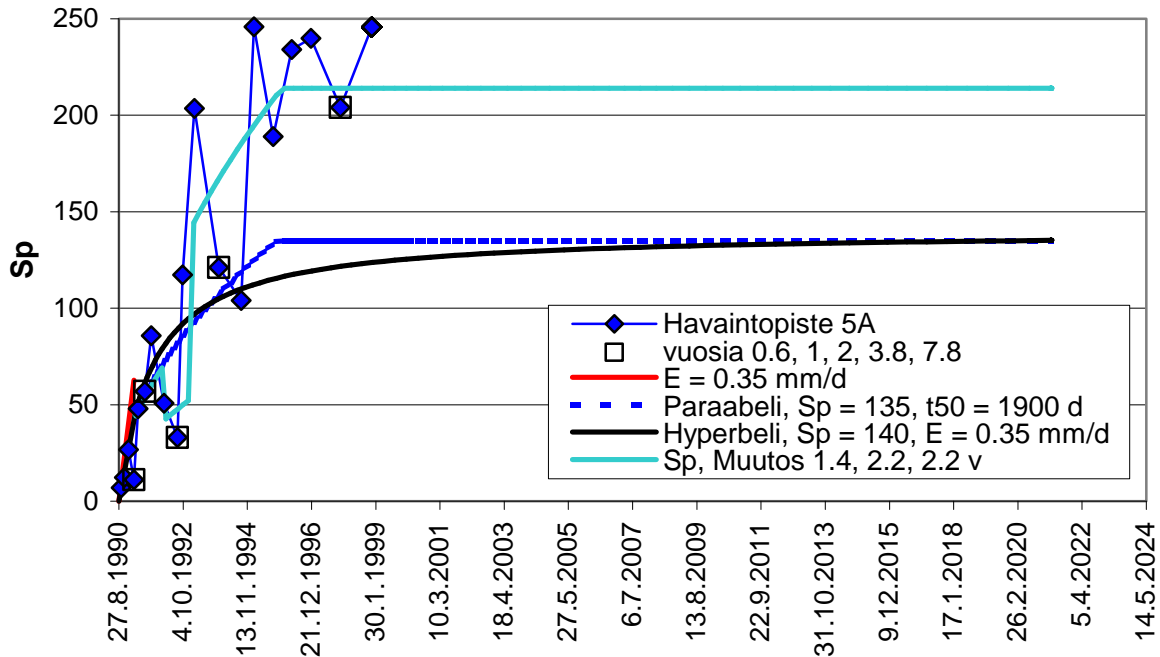
Painumapotentiaali

LIITE XII / s. 4

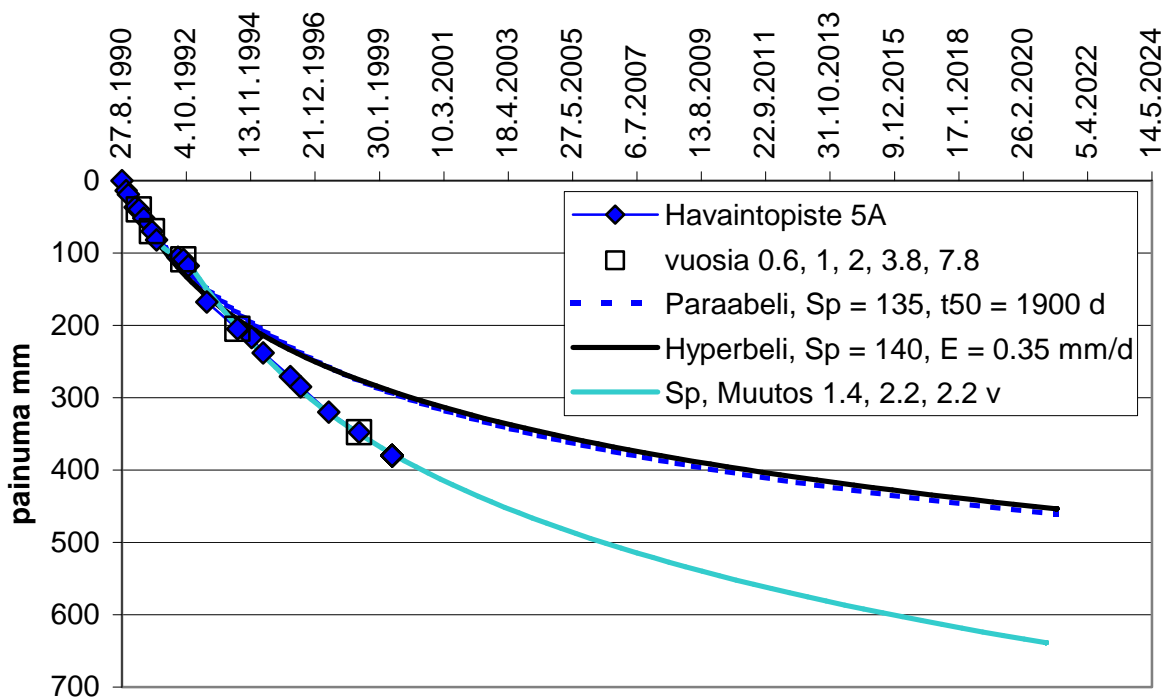
Pikku-Huopalahti, Korppaanmäentie 8 v.

Havaintopiste 5A

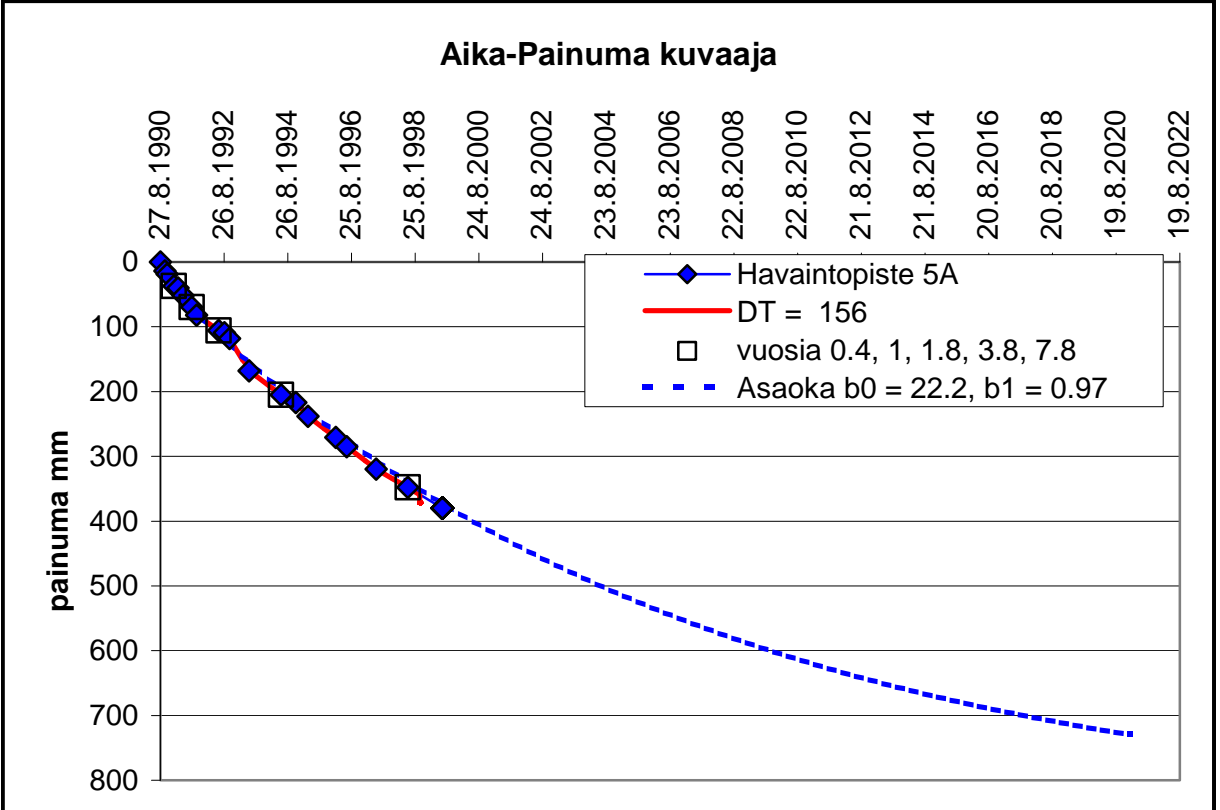
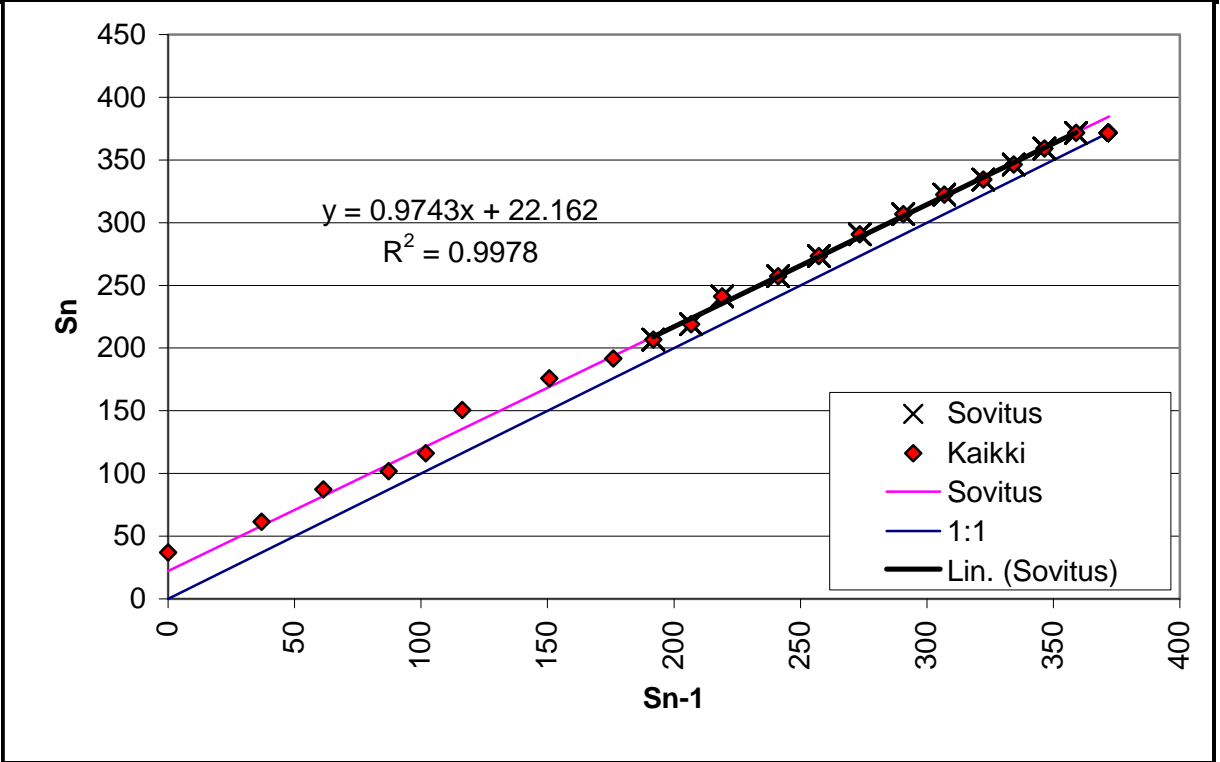
○ 1-puol. kl	H	w	m (b = 0)	m	alkupai.	t0 (d)	pain. t (a)	tod. t
● 2-puol. kl	10.2	100	5.4...9.1	6	40	203	30	30
input				80				
	Sp	t50/E	rs	B	c _v	pain. 30	virh. mm	
Paraabeli	135	1900	76	0.079	1.0	634 kev.	ei havaint.	
Hyperbeli	140	0.35	73	0.082		451	ei havaint.	



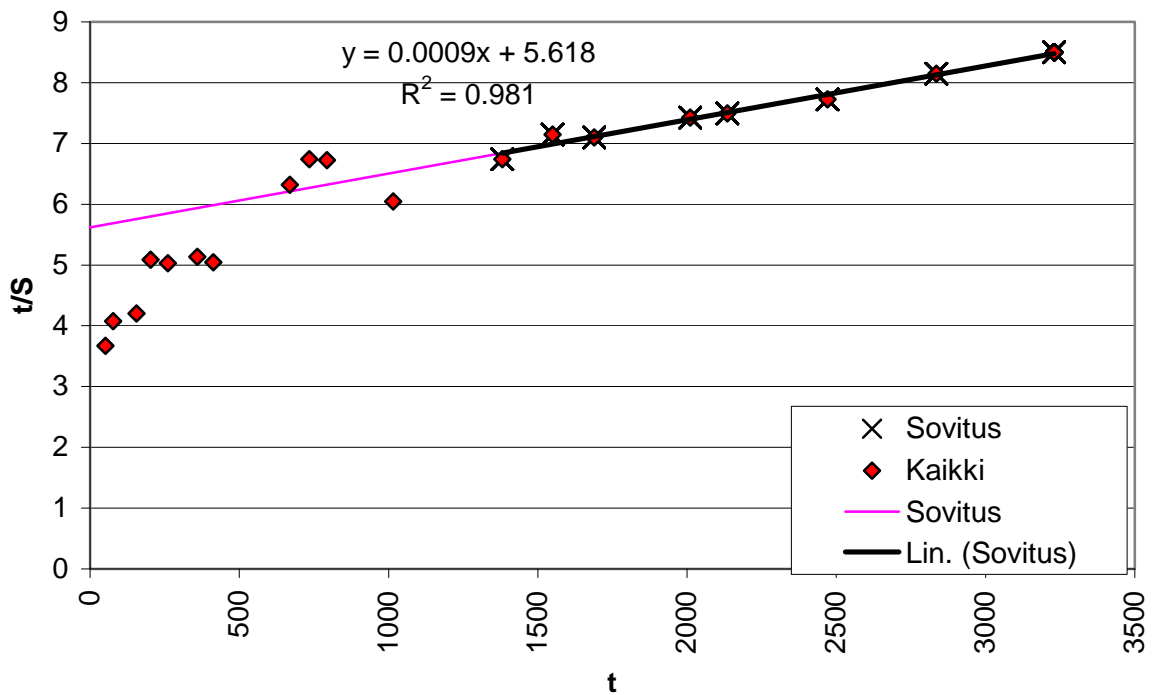
Aika-Painuma kuvaaja



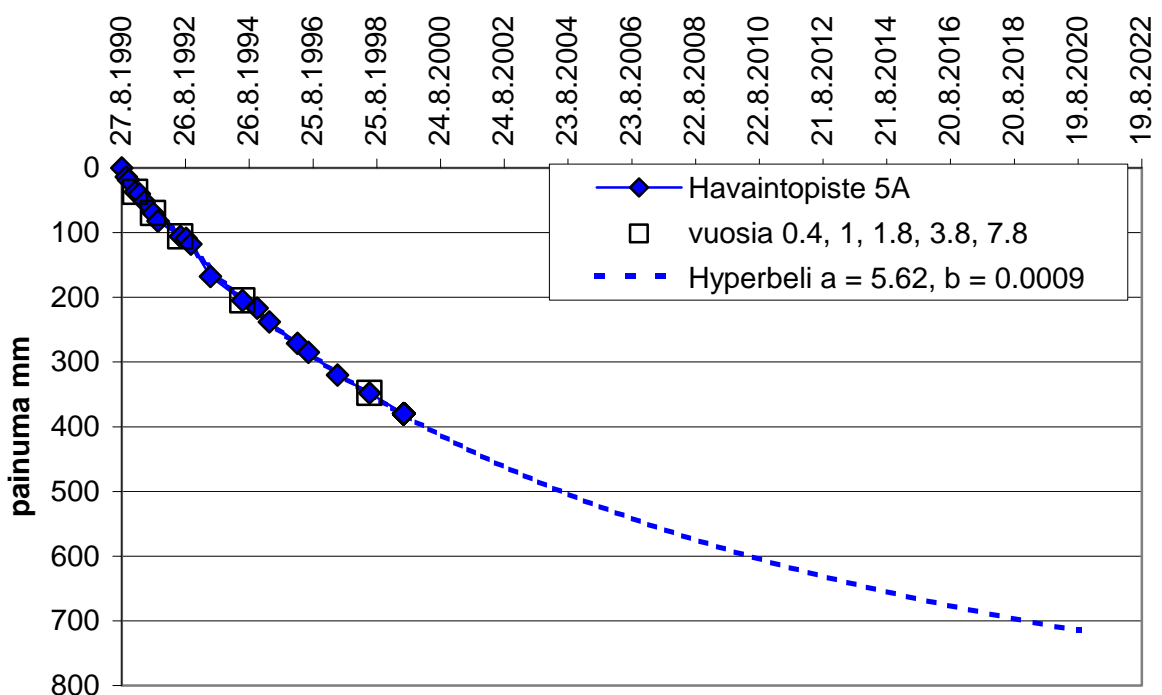
				pain. t (a)	tod. t
				30	30
input			output		
	β_0	β_1	t	Prim. Pain.	virh. mm
Asaoka	22.2	0.974	156.43	861	ei havaint.
	22.2	0.974	156.43		



Painumaennuste		Hyperbeli		LIITE XII / s. 6	
Pikku-Huopalahti, Korppaanmäentie 8 v.			Havaintopiste 5A		▼
				pain. t (a)	tod. t
				30	30
input			output		
	a	b	Painuma		virh. mm
Hyperbeli	5.62	8.86E-04	1128	715	ei havaint.



Aika-Painuma kuvaaja

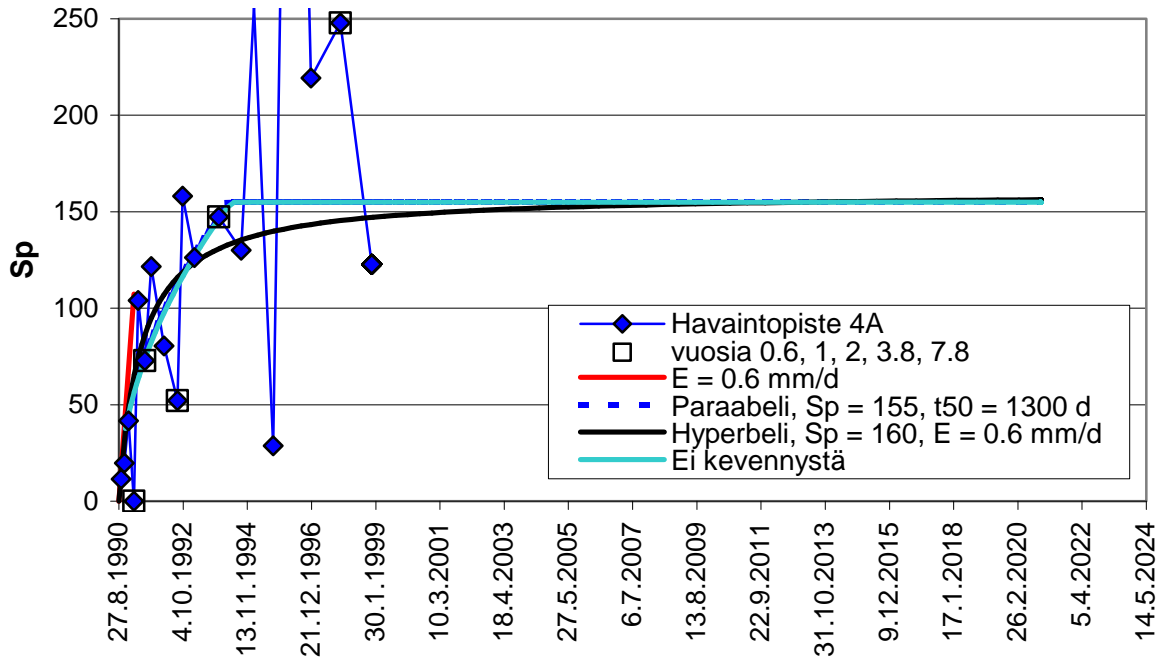


Pikku-Huopalahti, Korppaanmäentie 8 v.

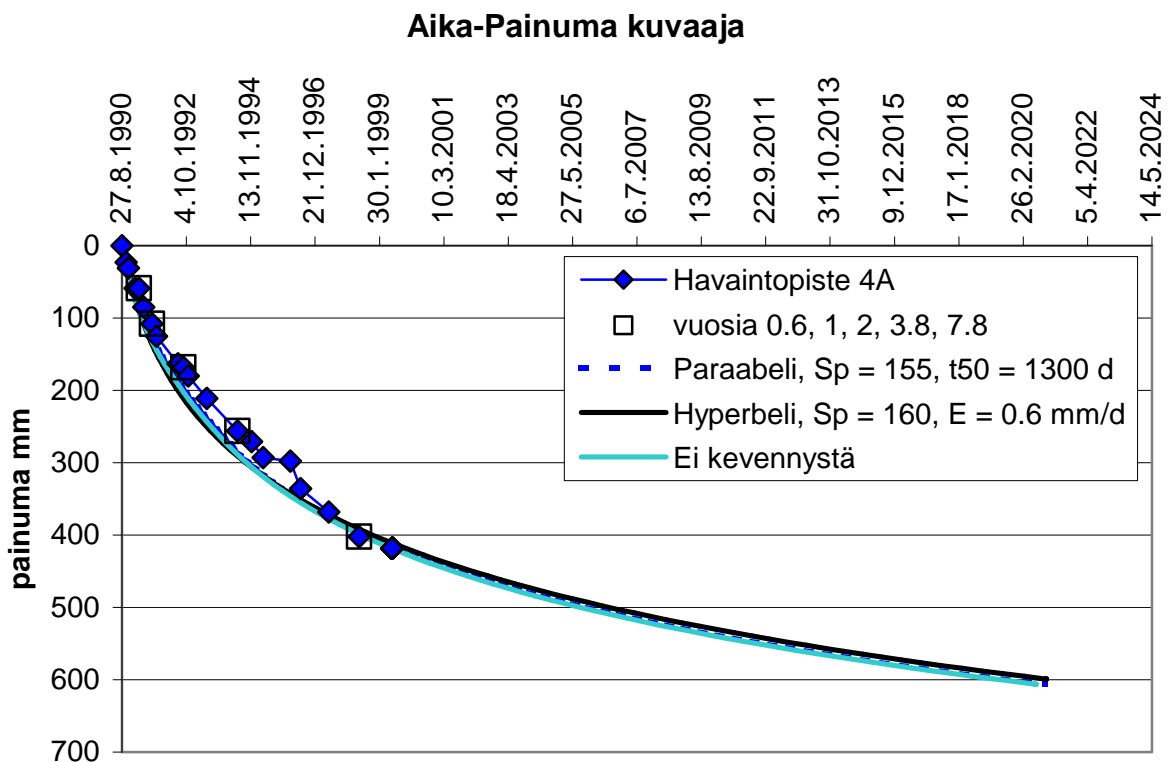
Havaintopiste 4A



○ 1-puol. kl	H	w	m (b = 0)	m	alkupai.	t0 (d)	pain. t (a)	tod. t
● 2-puol. kl	12	100	5.4...9.1	6	40	77	30	30
input				80				
	Sp	t50/E	rs	B	c _v	pain. 30	virh. mm	
Paraabeli	155	1300	77	0.078	2.0	605	ei havaint.	
Hyperbeli	160	0.60	75	0.080		598	ei havaint.	

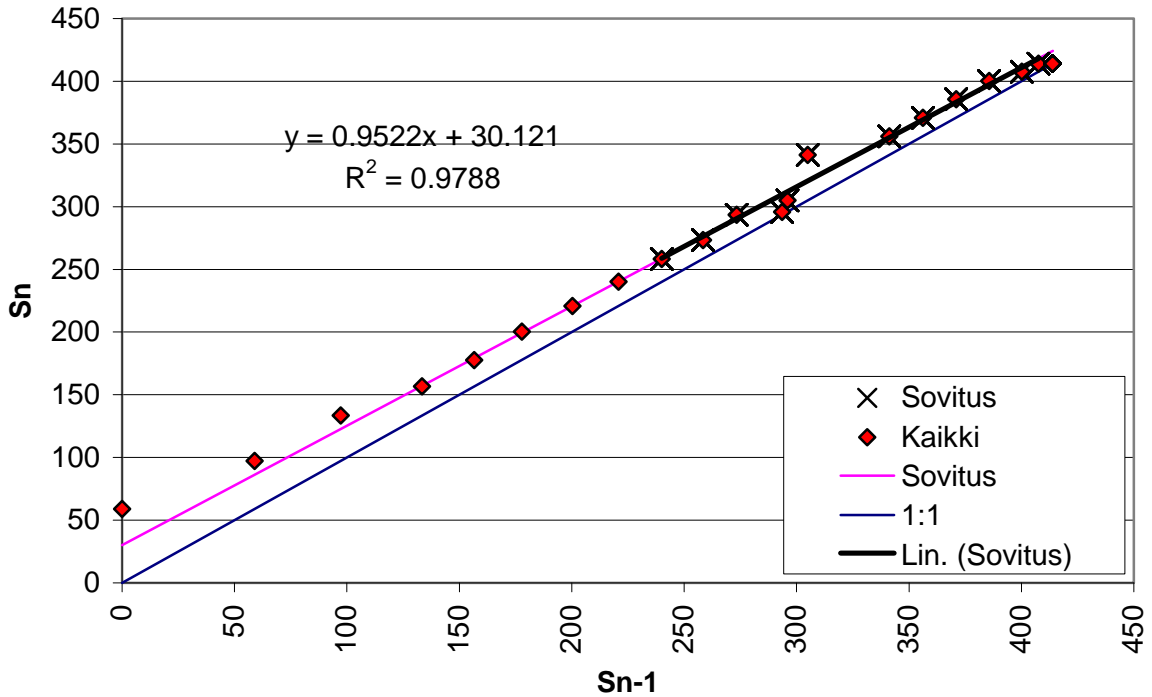


Aika-Painumapotentialiaali kuvaaja

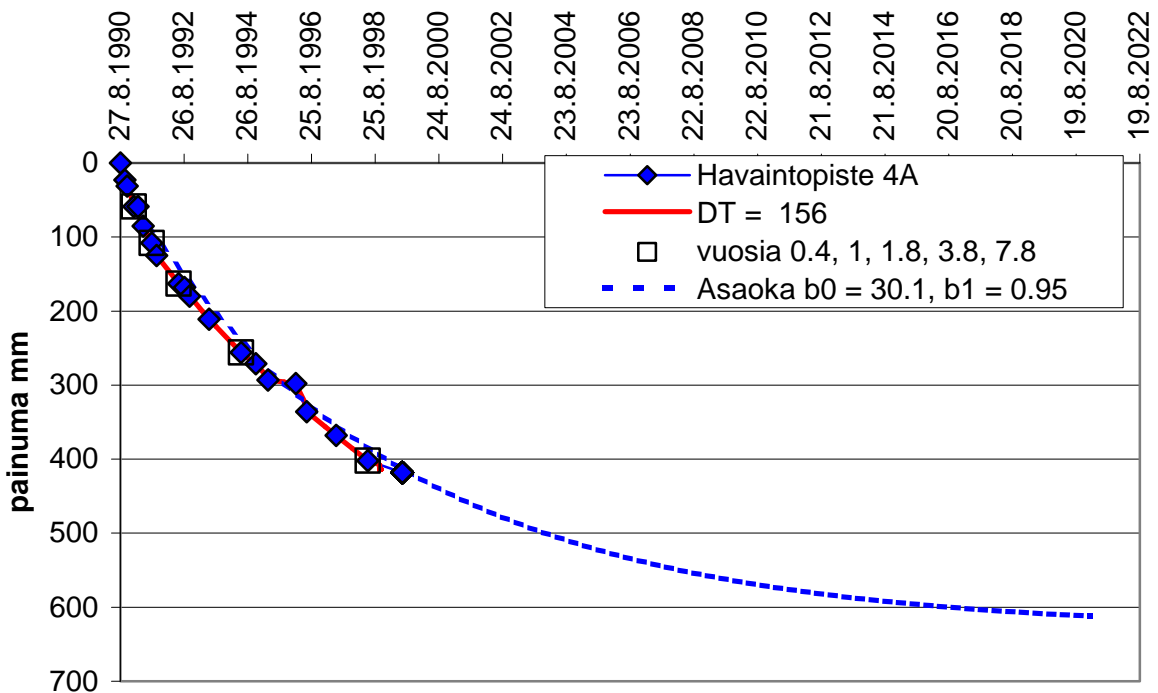


Aika-Painuma kuvaaja

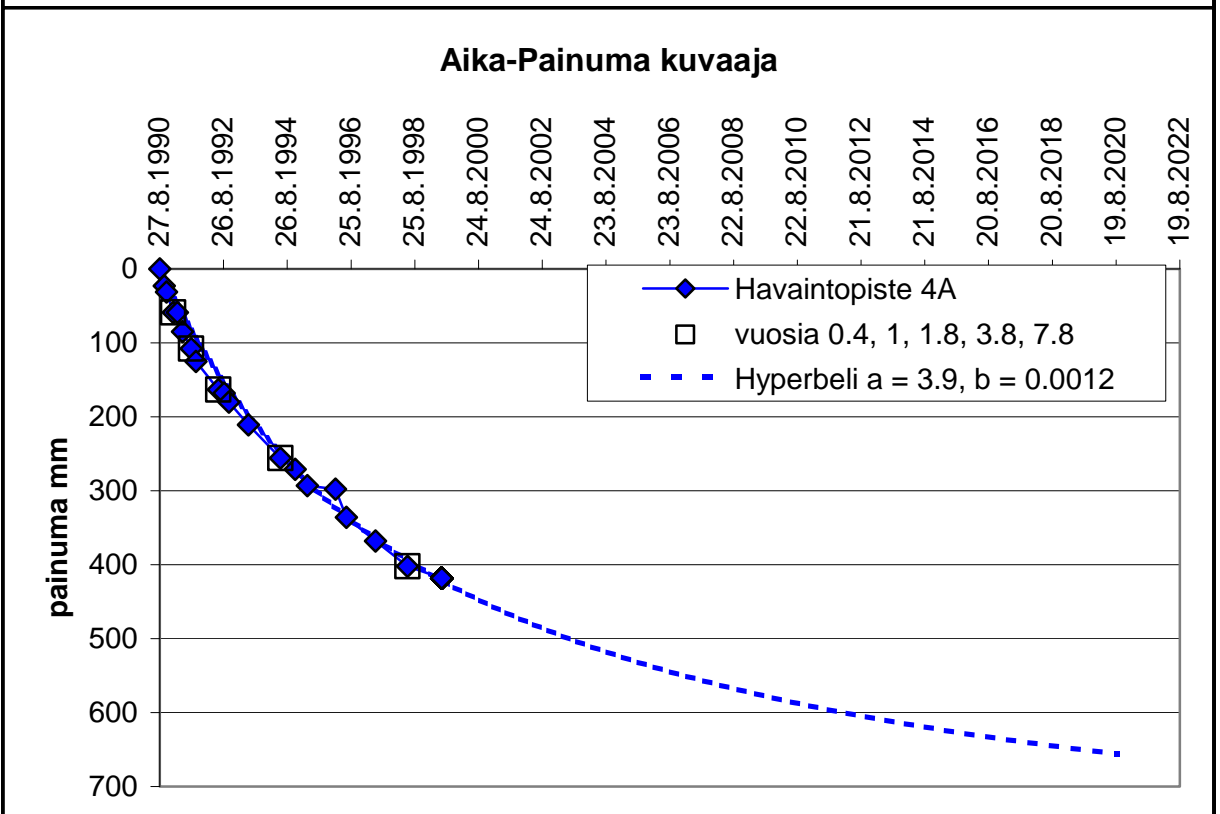
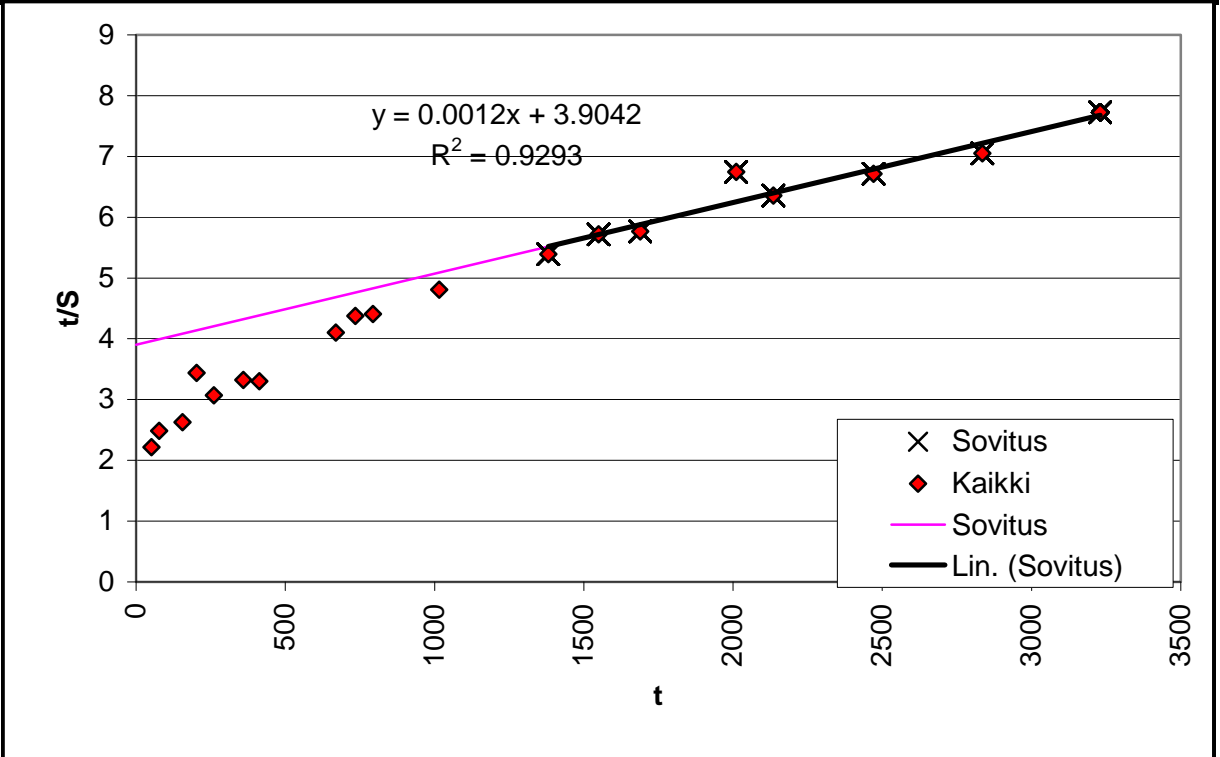
				pain. t (a)	tod. t	
				30	30	
input			output			
	β_0	β_1	t	Prim. Pain.	pain30	virh. mm
Asaoka	30.1	0.952	156.43	631	610	ei havaint.
	30.1	0.952	156.43			



Aika-Painuma kuvaaja



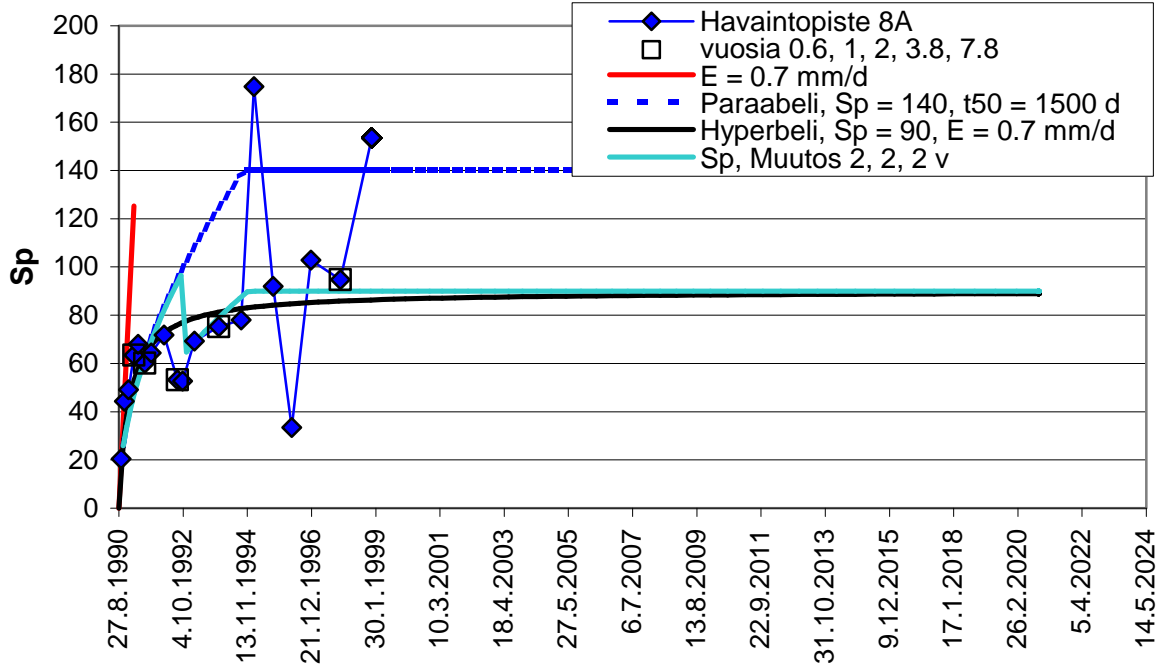
				pain. t (a)	tod. t
				30	30
input			output		
	a	b	Painuma	pain30	virh. mm
Hyperbeli	3.90	1.17E-03	855	656	ei havaint.



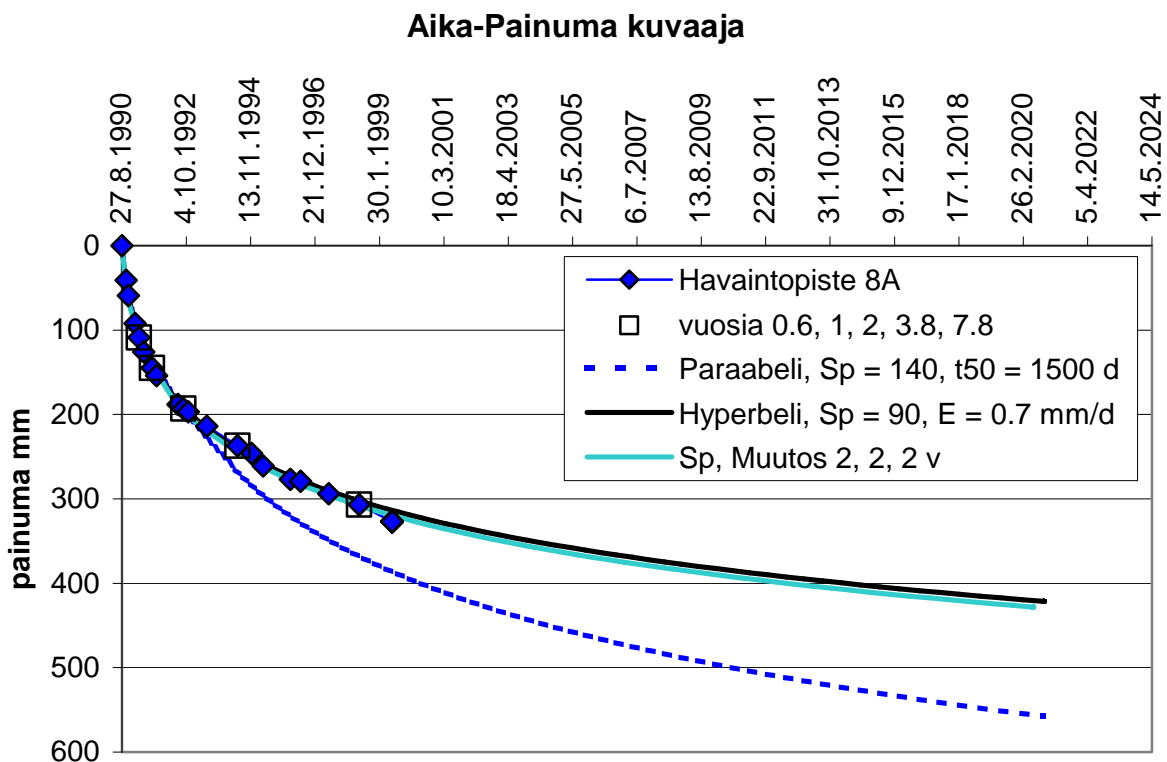
Pikku-Huopalahti, Korppaanmäentie 8 v.

Havaintopiste 8A

○ 1-puol. kl.	H	w	m (b = 0)	m	alkupai.	t0 (d)	pain. t (a)	tod. t
● 2-puol. kl.	13.5	100	5.4...9.1	6	50	51	30	30
input				80				
	Sp	t50/E	rs	B	c _v	pain. 30	virh. mm	
Paraabeli	140	1500	96	0.062	2.2	428 kev.	ei havaint.	
Hyperbeli	90	0.70	150	0.040		421	ei havaint.	

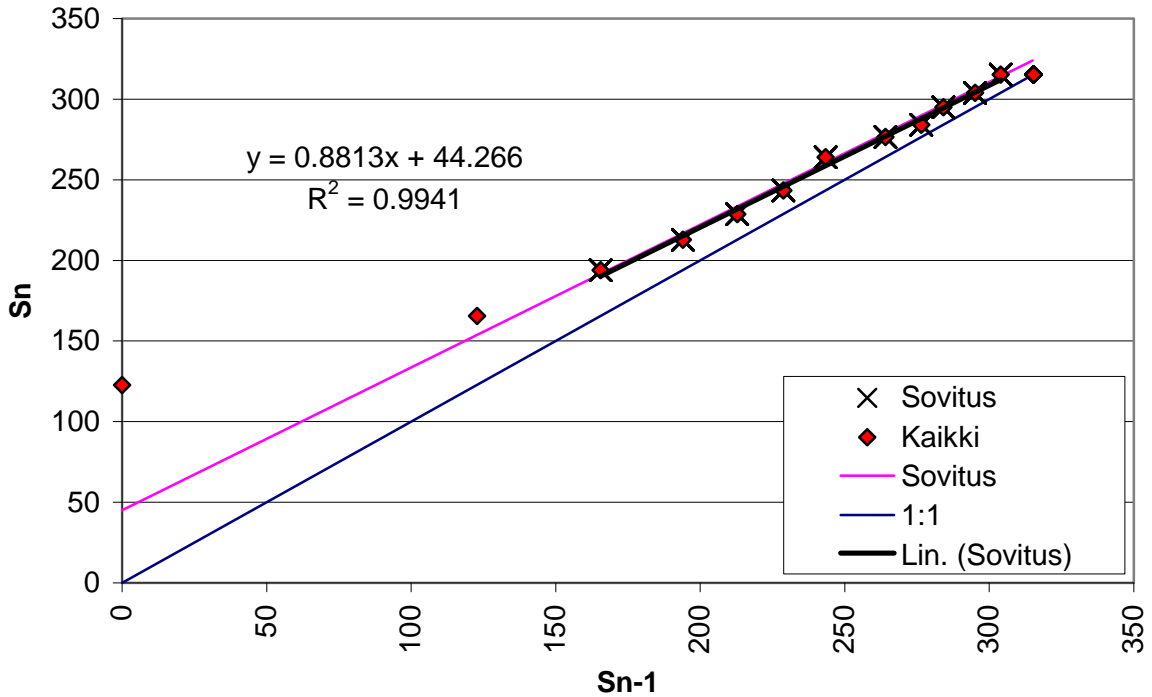


Aika-Painumapotentiaali kuvaaja

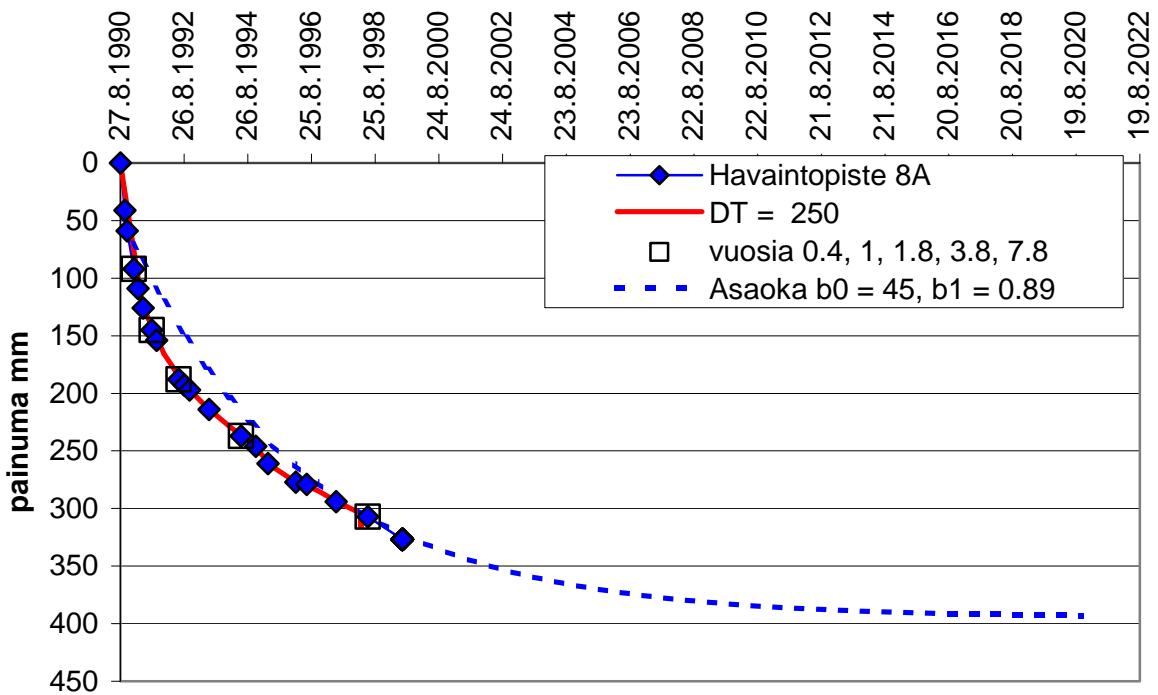


Aika-Painuma kuvaaja

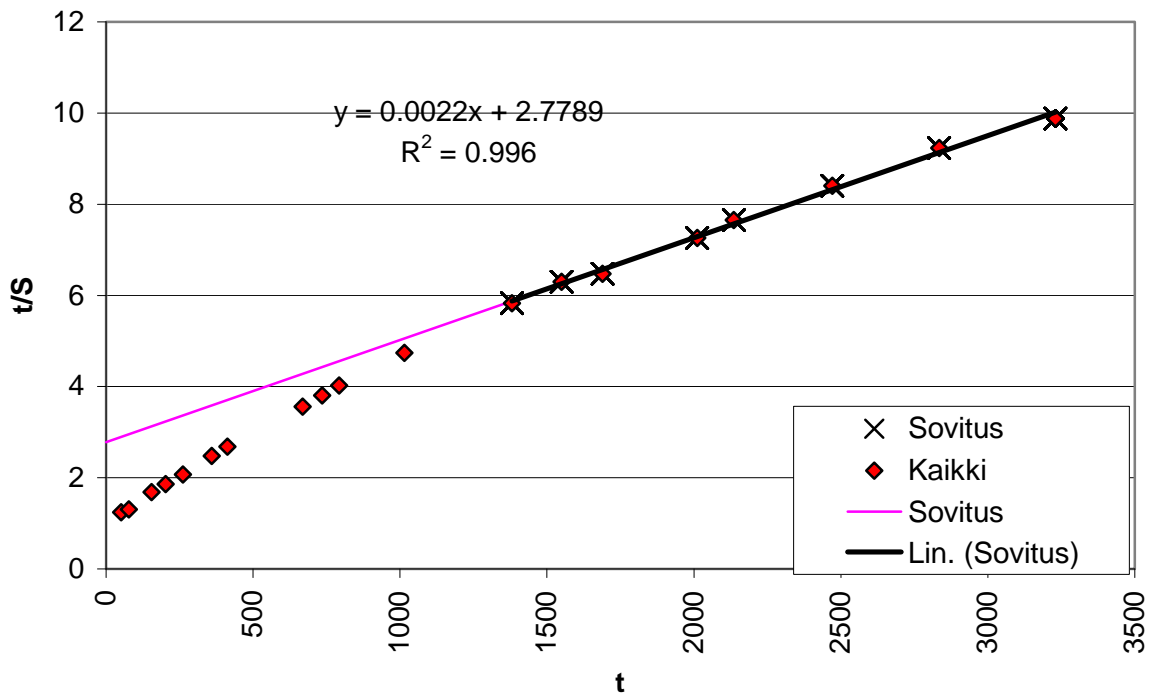
Painumaennuste		Asaoka		LIITE XII / s. 11	
Pikku-Huopalahti, Korppaanmäentie 8 v.				Havaintopiste 8A	
				pain. t (a)	tod. t
				30	30.14
input			output		
	β_0	β_1	t	Prim. Pain.	virh. mm
Asaoka	45.0	0.886	250.00	395	ei havaint.
	45.0	0.886	250.00		



Aika-Painuma kuvaaja



Painumaennuste		Hyperbeli		LIITE XII / s. 12	
Pikku-Huopalahti, Korppaanmäentie 8 v.			Havaintopiste 8A		▼
				pain. t (a)	tod. t
				30	30
input			output		
	a	b	Painuma		
Hyperbeli	2.78	2.24E-03	446	pain30	virh. mm
				401	ei havaint.



Aika-Painuma kuvaaja

