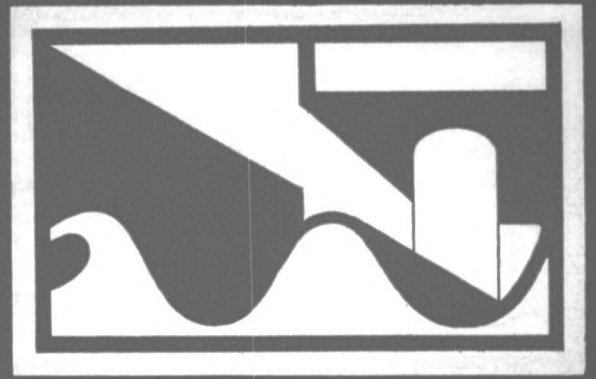
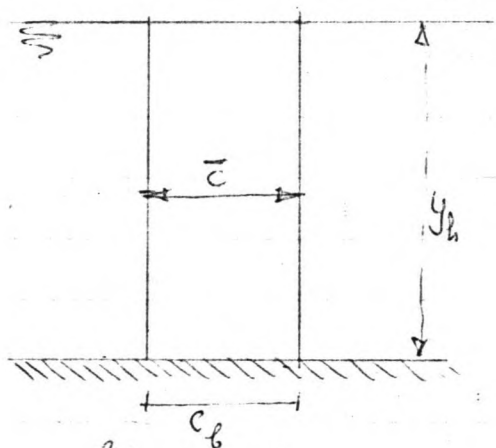




Delft University of Technology
Department of Civil Engineering
Coastal Engineering Group

BIJLAGE 32

In hoofdstuk IX is ~~de~~ verondersteld dat het sediment zich op een bepaald moment gelijkmatig over de diepte heeft verdeeld, zonder dat verlies aan de bodem is opgetreden. Op dat moment is dan de concentratie aan de bodem gelijk aan de over de vertikaal gemiddelde sedimentconcentratie $\bar{c}$. (zie figuur 1).



figuur 1.

De totale hoeveelheid ingebracht sediment per strekbreedte meter rivierbreedte is gelijk aan $\bar{c} y_h$. Per tijdseenheid wordt aan het water een hoeveelheid sediment onttrokken gelijk aan $w \bar{c}$.

De continuïteitsvergelijking wordt dan:

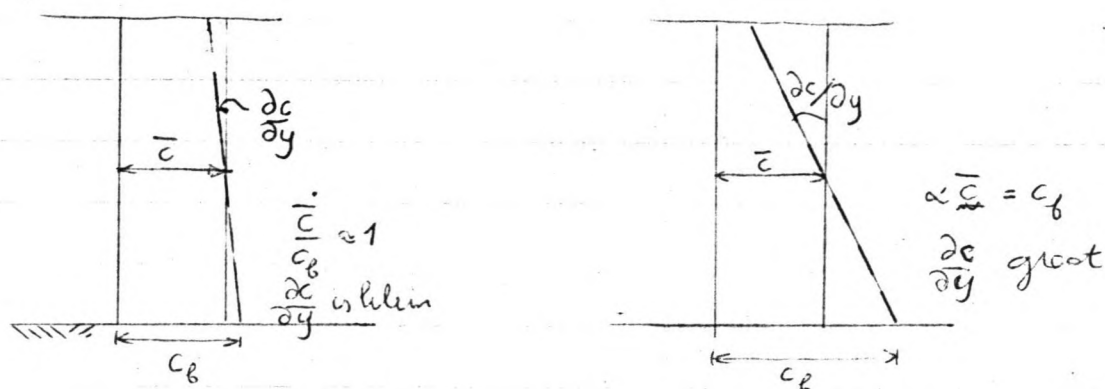
$$y_h \frac{d\bar{c}}{dt} + w \bar{c} = 0 \quad (1)$$

Deze differentiaalvergelijking heeft als oplossing:

$$\bar{c} = \bar{c}_0 e^{-\alpha(t-t_1)} \quad \text{met } \alpha = \frac{w}{y_h} \quad (2)$$

waarin $\bar{c}_0$ de concentratie op het tijdstip t_1 is.

Of de benadering volgens (1) juist is zal in het



figuur 2.

volgende veronderstellingen gedaan.

Ten eerste wordt aangenomen dat de mengweg L lineair over de hoogte verloopt, zodat de turbulente diffusiecoëfficiënt E de volgende uitdrukking wordt verkregen:

$$E = L |u^*| = \kappa y |u^*| \quad (6)$$

Ten tweede wordt verondersteld dat de schuifspanningsmeltheid in de buurt van de bodem ongeveer constant is.

Tenslotte wordt gesteld dat de verhouding $w/\kappa |u^*|$ gelijk aan 1 is.

Invullen van (6) in (5) geeft:

$$- \alpha c + \frac{\partial}{\partial y} \left(- \kappa y |u^*| \frac{\partial c}{\partial y} - w c \right) = 0 \quad (7)$$

$$- \frac{w}{y_h} c - \kappa |u^*| \frac{\partial c}{\partial y} - \kappa |u^*| y \frac{\partial^2 c}{\partial y^2} - w \frac{\partial c}{\partial y} = 0 \quad (8)$$

Deel door $\kappa |u^*|$ geeft:

$$+ y \frac{\partial^2 c}{\partial y^2} + \frac{\partial c}{\partial y} + \frac{w}{\kappa |u^*|} \frac{\partial c}{\partial y} + \frac{w}{\kappa y_h |u^*|} c = 0 \quad (9)$$

$$+ y \frac{\partial^2 c}{\partial y^2} + 2 \frac{\partial c}{\partial y} + \frac{1}{y_h} c = 0 \quad (10)$$

vermenigvuldigen van (10) met y geeft:

$$y^2 \frac{\partial^2 c}{\partial y^2} + 2y \frac{\partial c}{\partial y} + \frac{y}{y_h} c = 0 \quad (11)$$

Deze differentiaalvergelijking kan opgelost worden met behulp van Besselfuncties.

De oplossing van (11) ziet er als volgt uit (zie: C.R. Wylie, Advanced Engineering Mathematics):

$$c = y^{-1/2} \left[c_1 J_1 \left(\frac{2}{\sqrt{y_h}} y^{1/2} \right) + c_2 N_1 \left(\frac{2}{\sqrt{y_h}} y^{1/2} \right) \right] \quad (12)$$

waarin $J_1 \left(\frac{2}{\sqrt{y_h}} y^{1/2} \right)$ en $N_1 \left(\frac{2}{\sqrt{y_h}} y^{1/2} \right)$ respectievelijk Bessel en Neumannfuncties van de eerste orde zijn en c_1 en c_2 zijn constanten.

De uitdrukkingen voor de reeksontwikkelingen van de eerste orde Bessel- en Neumannfuncties zijn respectievelijk:

$$J_1 \left(2 \sqrt{\frac{y}{y_h}} \right) = \left(\sqrt{\frac{y}{y_h}} \right)^1 \sum_{k=0}^{\infty} \frac{(-1)^k \left(\sqrt{\frac{y}{y_h}} \right)^k}{k! \Gamma(1+k+1)} \quad (13)$$

en:

$$\begin{aligned} N_1 \left(2 \sqrt{\frac{y}{y_h}} \right) = & - \frac{\left(\sqrt{\frac{y}{y_h}} \right)^{-1}}{\pi} \sum_{k=0}^{\infty} \frac{(1-k-1)!}{k!} \left(\frac{y}{y_h} \right)^k \\ & + \frac{2}{\pi} \ln \left(\sqrt{\frac{y}{y_h}} \right) J_1 \left(2 \sqrt{\frac{y}{y_h}} \right) + \\ & - \frac{\left(\sqrt{\frac{y}{y_h}} \right)}{\pi} \sum_{k=0}^{\infty} \left\{ \psi(k+1) + \psi(1+k+1) \right\} \frac{\left(-\frac{y}{y_h} \right)^k}{k! (1+k)!} \end{aligned} \quad (14)$$

waarin: $\psi(m) = -\gamma + \sum_{k=1}^{m-1} k^{-1} \quad (m \geq 2) \quad (15)$

en:

$$\psi(1) = -\gamma \quad (16)$$

Wordt verondersteld dat een tweede orde benadering voldoende nauwkeurig is dan gaan vergelijking (13) en (14) over in:

$$J_1 \left(2 \sqrt{\frac{y}{y_h}} \right) = \left(\sqrt{\frac{y}{y_h}} \right) \left\{ 1 - \frac{y}{2y_h} \right\} \quad (15)$$

en:

$$N_1 \left(2 \sqrt{\frac{y}{y_h}} \right) = \frac{2}{\pi} \left\{ \sqrt{\frac{y}{y_h}} \left(1 - \frac{y}{2y_h} \right) \ln \left(\sqrt{\frac{y}{y_h}} \right) \right\} + \\ - \frac{1}{\pi} \sqrt{\frac{y}{y_h}} \left[-2\gamma + 1 + \left(-2\gamma + \frac{5}{2} \right) \left(-\frac{y}{2y_h} \right) \right] \quad (16)$$

De konstanten c_1 en c_2 uit vergelijking (12) zijn te bepalen uit de randvoorwaarde dat het transport door het oppervlak gelijk aan nul is.

Als het transport door het oppervlak gelijk aan nul is geldt (zie (6.45)):

$$\varepsilon \frac{\partial c}{\partial y} + w c = 0 \quad (17)$$

Deze vergelijking gaat met $w/\kappa|u^*|$ over in:

$$y \frac{\partial c}{\partial y} + c = 0 \quad (18)$$

De gradiënt ~~$\frac{\partial c}{\partial y}$~~ is te bepalen. Differentiëren van (12) naar y geeft $\frac{\partial c}{\partial y}$:

$$\frac{\partial c}{\partial y} = -\frac{1}{2} y^{-3/2} \left[c_1 J_1 \left(\frac{2}{\sqrt{y_h}} y^{1/2} \right) + c_2 N_1 \left(\frac{2}{\sqrt{y_h}} y^{1/2} \right) \right] \\ + y^{-1/2} \left[c_1 J_1' \left(2 \sqrt{\frac{y}{y_h}} \right) + c_2 N_1' \left(2 \sqrt{\frac{y}{y_h}} \right) \right] \quad (19)$$

De afgeleide van $J_1\left(2\sqrt{\frac{y}{y_h}}\right)$ is gelijk aan:

$$\begin{aligned} J_1'\left(2\sqrt{\frac{y}{y_h}}\right) &= J_0\left(2\sqrt{\frac{y}{y_h}}\right) - \frac{1}{2}\sqrt{\frac{y_h}{y}} J_1\left(2\sqrt{\frac{y}{y_h}}\right) \\ &= \left(\frac{1}{2} - \frac{3}{4}\frac{y}{y_h}\right) \end{aligned} \quad (20)$$

en de afgeleide van $N_1\left(2\sqrt{\frac{y}{y_h}}\right)$:

$$\begin{aligned} N_1'\left(2\sqrt{\frac{y}{y_h}}\right) &= N_0\left(2\sqrt{\frac{y}{y_h}}\right) - \frac{1}{2}\sqrt{\frac{y_h}{y}} N_1\left(2\sqrt{\frac{y}{y_h}}\right) \\ &= \frac{1}{\pi}\left(1 - \frac{y}{2y_h}\right) \ln\left(\sqrt{\frac{y}{y_h}}\right) + \frac{3}{\pi}\gamma\left(1 - \frac{y}{y_h}\right) + \frac{1}{2\pi}\left(\frac{21}{4}\frac{y}{y_h} - 1\right) \end{aligned} \quad (21)$$

Voor $y = y_h$ wordt $\frac{\partial c}{\partial y}$:

$$\begin{aligned} \frac{\partial c}{\partial y}\bigg|_{y=y_h} &= -\frac{1}{2}y_h^{-3/2} \left[\frac{1}{2}c_1 + c_2 \left(\frac{1}{\pi} \left(\gamma + \frac{1}{4} \right) \right) \right] \\ &\quad + y_h^{-1/2} \left[-\frac{1}{4}c_1 + c_2 \left(\frac{1}{\pi} \left(\frac{3}{2}\gamma + \frac{17}{8} \right) \right) \right] \end{aligned} \quad (22)$$

Voor $y = y_h$ ~~gaat~~ ⁽¹⁸⁾ wordt na enig uitwerken:

$$\frac{1}{4}c_1 + c_2 \left(\frac{1}{\pi} \left(\frac{1}{2}\gamma + \frac{1}{8} \right) \right) + y_h^{1/2} \left[-\frac{1}{4}c_1 + c_2 \left(\frac{1}{\pi} \left(\frac{3}{2}\gamma + \frac{17}{8} \right) \right) \right] = 0 \quad (23)$$

Een oplossing voor c_1 en c_2 die ongelijk is aan de oplossing $c_1 = c_2 = 0$ kan gevonden worden door c_2 gelijk te stellen aan 1 en dan c_1 uit (23) op te lossen:

c_2 en c_1 worden dan respectievelijk:

$$c_2 = 1 \quad (24)$$

$$c_1 = \frac{-\frac{1}{\pi} \left(\frac{1}{2}\gamma + \frac{1}{8} \right) - \frac{1}{\pi} y_h^{1/2} \left(\frac{3}{2}\gamma + \frac{17}{8} \right)}{\left(\frac{1}{4} - \frac{1}{4} y_h^{1/2} \right)} \quad (25)$$

In de hier beschikte gevallen wordt een diepte y_h gebruikt van ongeveer 16 meter. Dit invullen in (25) geeft:

$$c_1 = \frac{26}{3\pi} y + \frac{23}{2\pi} \quad (26)$$

Als de konstanten c_1 en c_2 bekend zijn ~~is~~ ~~de~~ vergelijking⁽¹²⁾ voor het verloop van de concentratie over de hoogte als volgt te schrijven ($y_h = 16$ meter):

$$c = y^{-1/2} \left[\left(\frac{26}{3\pi} y + \frac{23}{2\pi} \right) J_1 \left(2 \sqrt{\frac{y}{y_h}} \right) + N_1 \left(2 \sqrt{\frac{y}{y_h}} \right) \right] \quad (27)$$

Voor kleine waarden van $2 \sqrt{\frac{y}{y_h}}$ nadert $J_1 \left(2 \sqrt{\frac{y}{y_h}} \right)$ tot:

$$J_1 \left(2 \sqrt{\frac{y}{y_h}} \right) \sim \left(\frac{1}{2} \cdot 2 \sqrt{\frac{y}{y_h}} \right)^1 / \Gamma(2) \quad (28)$$

(zie Abramowitz en Stegun: Handbook of Mathematical Functions, hoofdstuk 9).

~~Voor waarden van y~~ ~~voor te kleine waarden van y~~ (in de buurt van de bodem) wordt (28) gebruikt

Voor kleine waarden van y (bijvoorbeeld $y = \frac{1}{64} y_h$) wordt (28):

$$J_1 \left(2 \sqrt{\frac{\frac{1}{64} y_h}{y_h}} \right) = J_1 \left(\frac{1}{4} \right) \sim \frac{1}{8} \quad (29)$$

De concentratie c op deze hoogte is dan:

$$c_{\frac{1}{64} y_h = y} = \left(\frac{1}{64} y_h \right)^{-1/2} \left[\left(\frac{26}{3\pi} y + \frac{23}{2\pi} \right) \cdot \frac{1}{8} + N_1 \left(2 \sqrt{\frac{\frac{1}{64} y_h}{y_h}} \right) \right] \quad (30)$$

Invullen van (16) in (30) en uitwerken geeft:

$$C \Big|_{y = \frac{1}{64} y_h} = \left(\frac{1}{64} y_h \right)^{-1/2} * (0.52) \quad (31)$$

De concentratie c op een hoogte $y = \frac{1}{2} y_h$ is te berekenen door $y = \frac{1}{2} y_h$ in te vullen in (15), (16) en (27). De concentratie op $y = \frac{1}{2} y_h$ is dan gelijk aan:

$$C \Big|_{y = \frac{1}{2} y_h} = \left(\frac{1}{2} y_h \right)^{-1/2} * (2.79) \quad (32)$$

De verhouding tussen de concentratie in de buurt van de bodem ($y = \frac{1}{64} y_h$) en de concentratie op $y = \frac{1}{2} y_h$ is gelijk aan:

$$\frac{C \Big|_{y = \frac{1}{2} y_h}}{C \Big|_{y = \frac{1}{64} y_h}} = \frac{\left(\frac{1}{2} y_h \right)^{-1/2} * (2.79)}{\left(\frac{1}{64} y_h \right)^{-1/2} * (0.52)} = 0.95 \quad (33)$$

Hieruit blijkt dat de concentratie op $y = \frac{1}{2} y_h$ niet veel verschilt van de concentratie in de buurt van de bodem.

~~Wacht nu~~, in dit geval ~~kan~~ andere verhoudingen van de concentraties op verschillende hoogten ^(ongeveer) geven hetzelfde beeld als (33).

~~Wacht nu~~ Stel nu dat de gemiddelde concentratie in dit geval gelijk is aan de concentratie op $y = \frac{1}{2} y_h$. Uit het bovenstaande blijkt dan dat een redelijke benadering van de sedimentatie verbruiken ^{kan} worden door gebruik te maken van vergelijking (1).

Opgemerkt dient nog wel opgemerkt te worden dat in bovenstaande berekeningen een aantal ^{voonderstellingen} ~~voonderstellingen~~ zijn toegepast die ~~idea~~ zijn gedaan die niet geheel overeenkomen met de aannamen gedaan bij de be-

rekeningen uitgevoerd met het mathematisch model.
In eerste instantie benadering kan echter gesteld worden
dat met de δ in hoofdstuk IX gemaakte benadering van
de sedimentatie redelijke resultaten te verwachten berei-
ken zijn.

ERRATA

blz. 7	4 r.v.b.	[lit. 20]
	1 r.v.o	(deeltjes $< 50 \mu$)
blz. 85	formule (5.37)	$C_{y=0} = P_{y=0} $
blz. 96	formule (6.45)	$\hat{u}_b^* \gg \bar{u}_b^*$
	10 r.v.o.	$\hat{u}_b^* / \bar{u}_b^*$
blz. 106	13 r.v.b.	$t_* + \Delta t_*$
blz. 112	6 r.v.o	$y_* = \frac{1}{2} \Delta y_*$
blz. 119	12 r.v.o	$\Delta y'_*$
blz. 124	3 r.v.o	(6.118) toevoegen
blz. 128	9 r.v.o	$u \rightarrow \bar{u}$
	11 r.v.o	$u \rightarrow \bar{u}$
blz. 150	13 r.v.b.	$\{ \psi(k+1) + \psi(n+k+1) \}$
	9 r.v.b.	[lit. 13]
	2 r.v.o.	[lit. 13]
blz. 151	7 r.v.b.	$\frac{1}{4} z^2 e^{-i\pi/2}$
	1+2 r.v.b.	$\{ \ln(\frac{1}{2} Y) + \gamma \}$
		$\{ \frac{1}{4} \frac{Y^2}{(4!)^2} + \dots \}$
blz. 152	4 r.v.b.	$y^3 \rightarrow z^3$
	5 r.v.b.	$-\frac{1}{4} z^2 e^{-i\pi/2}$
blz. 153	6 r.v.o.	$r_h \rightarrow 2r_h$
blz. 162	7 r.v.b.	r toevoegen
blz. 163	5 r.v.b.	κ toevoegen
	4 r.v.b.	[lit. 16]
blz. 170	formule (C.3) +/m (C.6)	$\sqrt{3\pi/8}$
blz. 171	2 r.v.b.	r toevoegen
	5 r.v.o	$\sqrt{8/3\pi}$
	7 r.v.o	$\sqrt{3\pi/8}$
blz. 110	1 r.v.b.	$\Delta y'_*$

Bijlagen 19^c, 20^c, 23^b, 24^a, 24^b, 25^b zijn bewaarden.

GEVAL 1,2 en 5

$C_p \text{ [m}^{1/2}/\text{s]}$

150

140

130

120

110

100

90

80

70

60

50

40

30

20

10

0.125T

0.250T

0.375T

0.500T

0.625T

0.750T

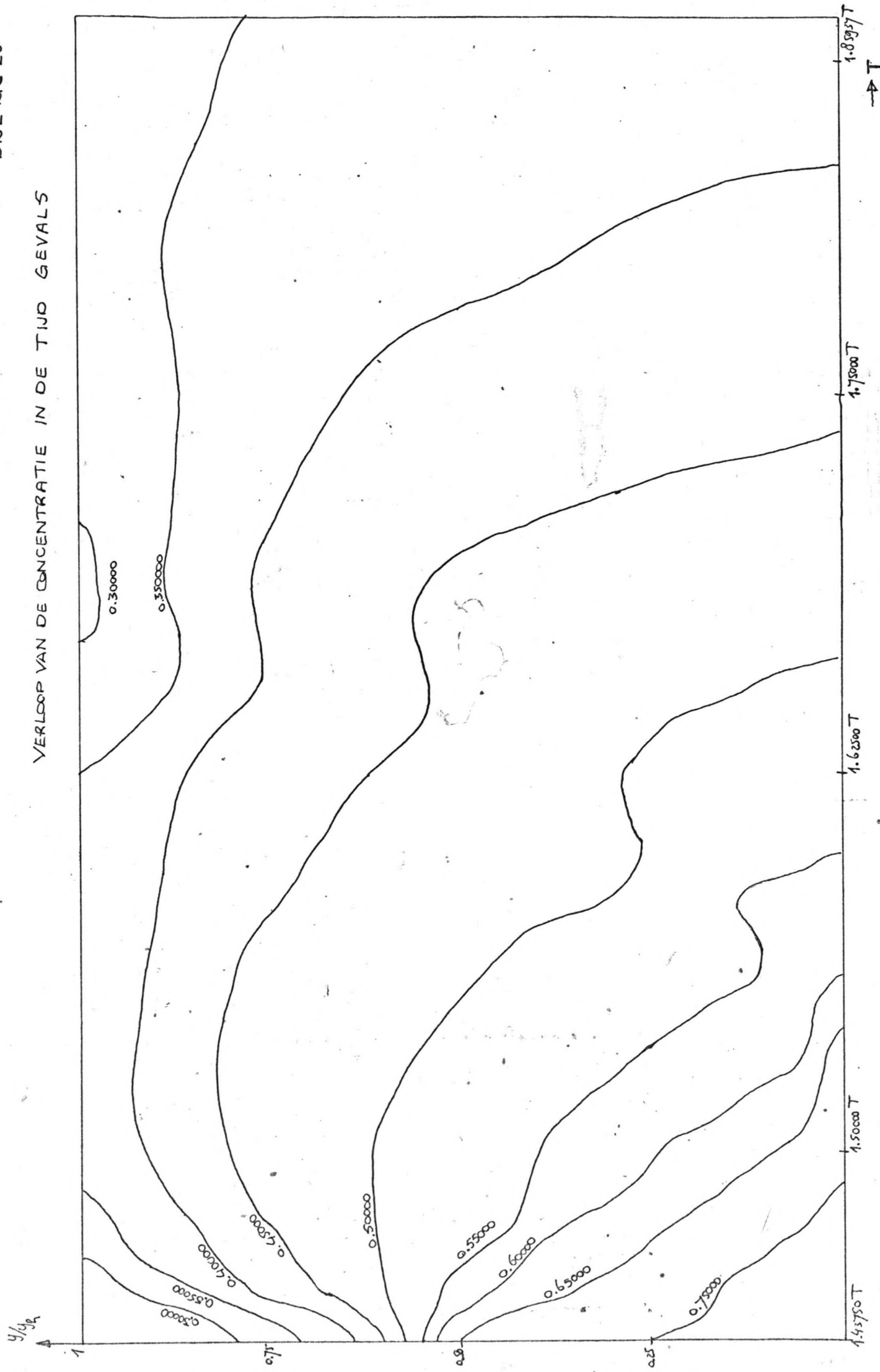
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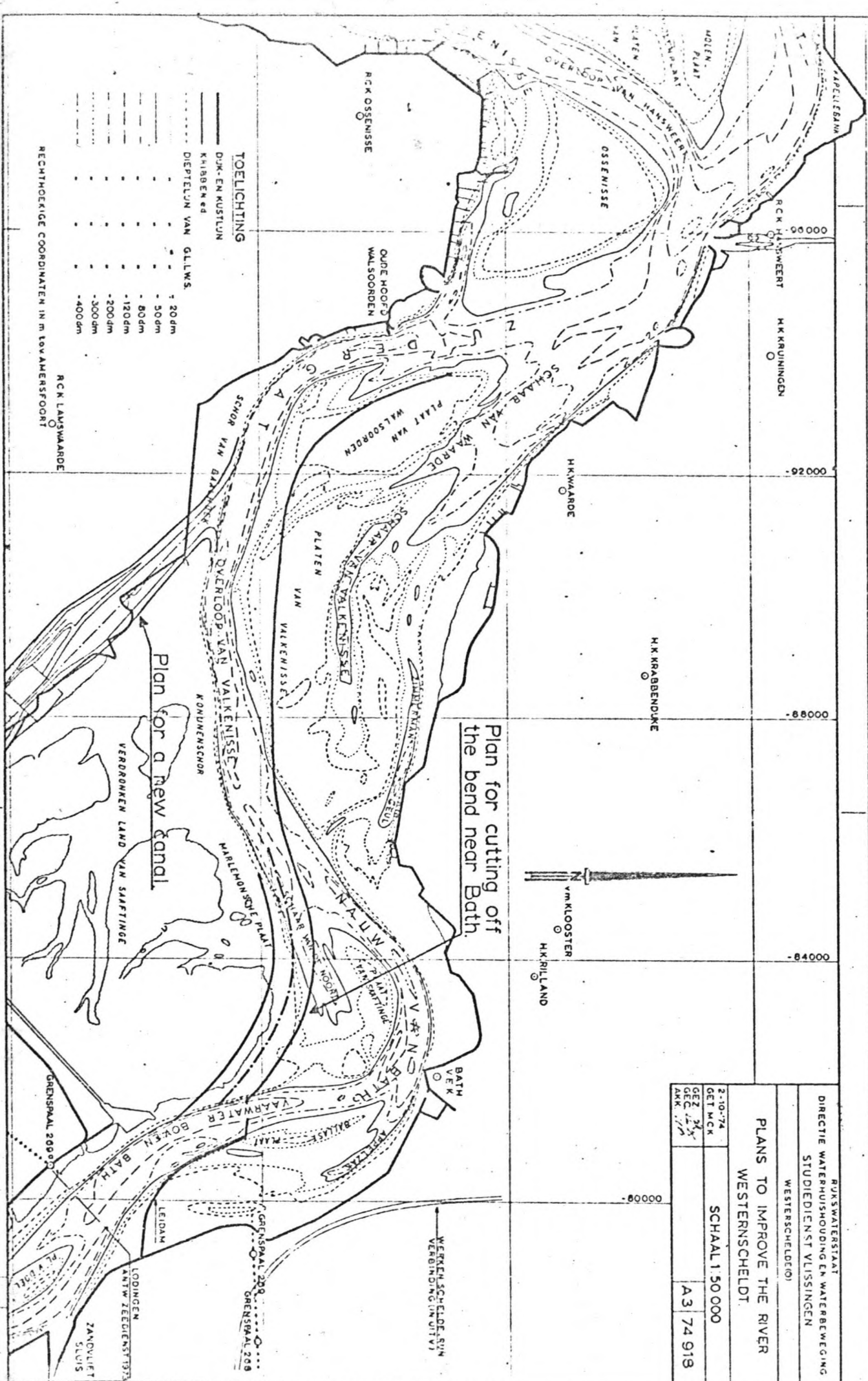
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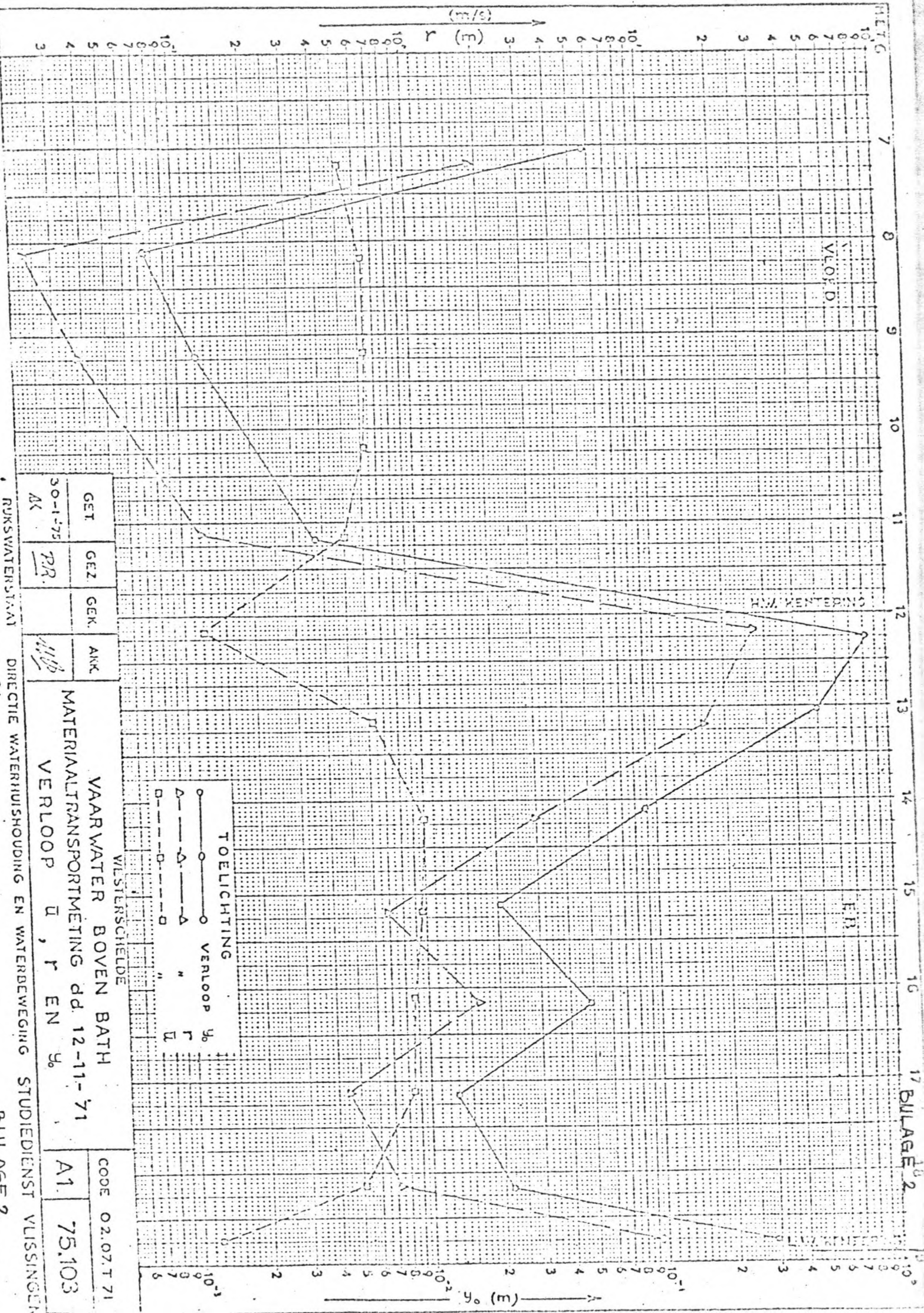
BIJLAGE 30

VERLOOP VAN DE CHEZY-COEFFICIENT
ALS FUNKTIE VAN DE TIJD

VERLOOP VAN DE CONCENTRATIE IN DE TIJD GEVALS







GET	GEZ	GEK	ANK
30-1-75	PR.		11/8
AK			

WAARWATER BOVEN BATH
 MATERIAALTRANSPORTMETING dd. 12-11-71
 VERLOOP $\cup$, Γ EN γ

CODE 02.07.T 71
 A1 75.103

4.0

4.6

4.4

4.2

4.0

3.8

3.6

3.4

3.2

3.0

2.8

2.6

2.4

2.2

2.0

1.8

1.6

1.4

1.2

1.0

0.8

0.6

0.4

0.2

- ZUIDERGAT 12-11-'71
 △ VAARWATER BOVEN BATH 12-11-'71
 ◇ VAARWATER BOVEN BATH 21-3-'73
 * MIDDELGAT 9-6-'70



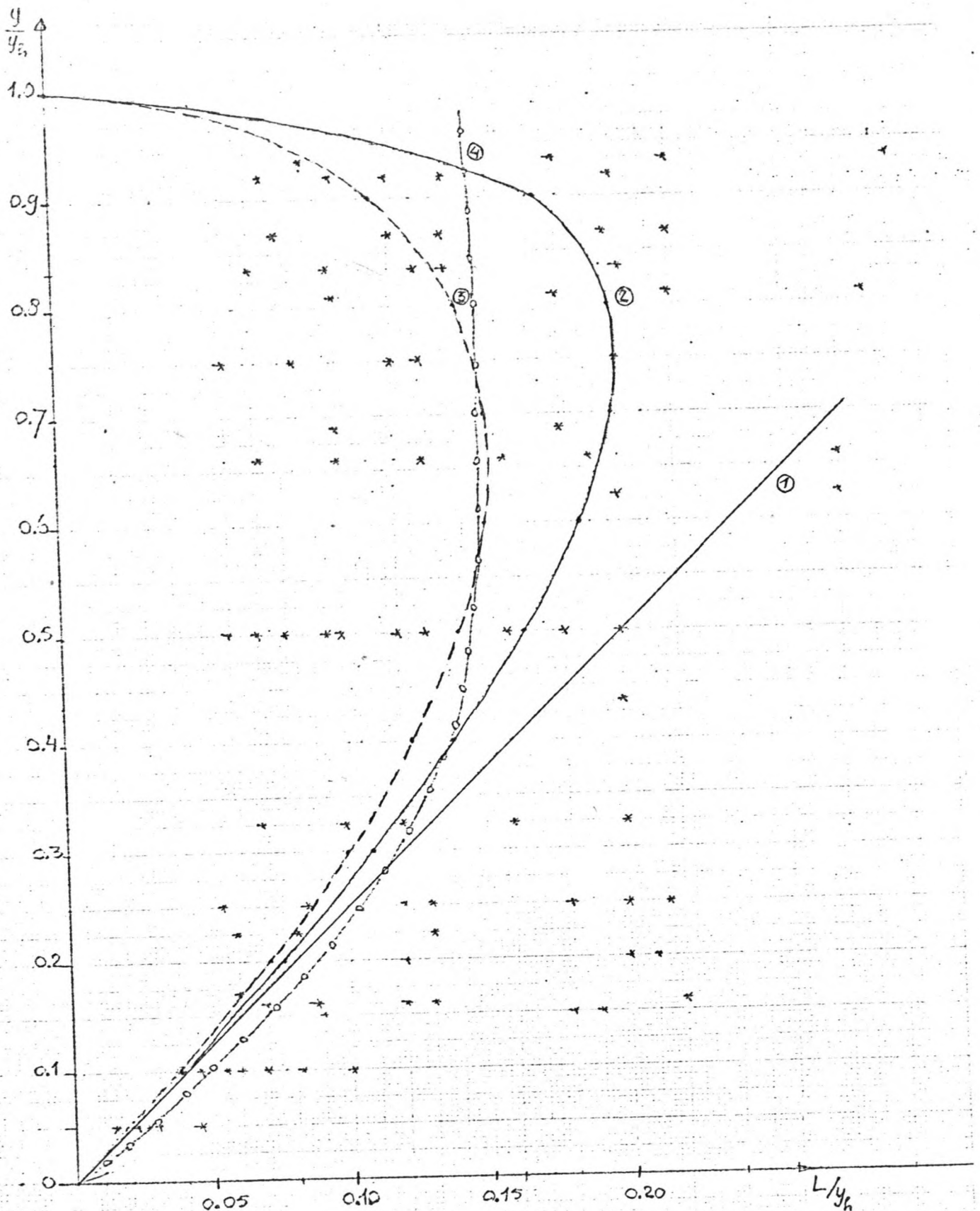
GET. GEZ. GEC. AKK.

WESTERSCHDELDE OOST

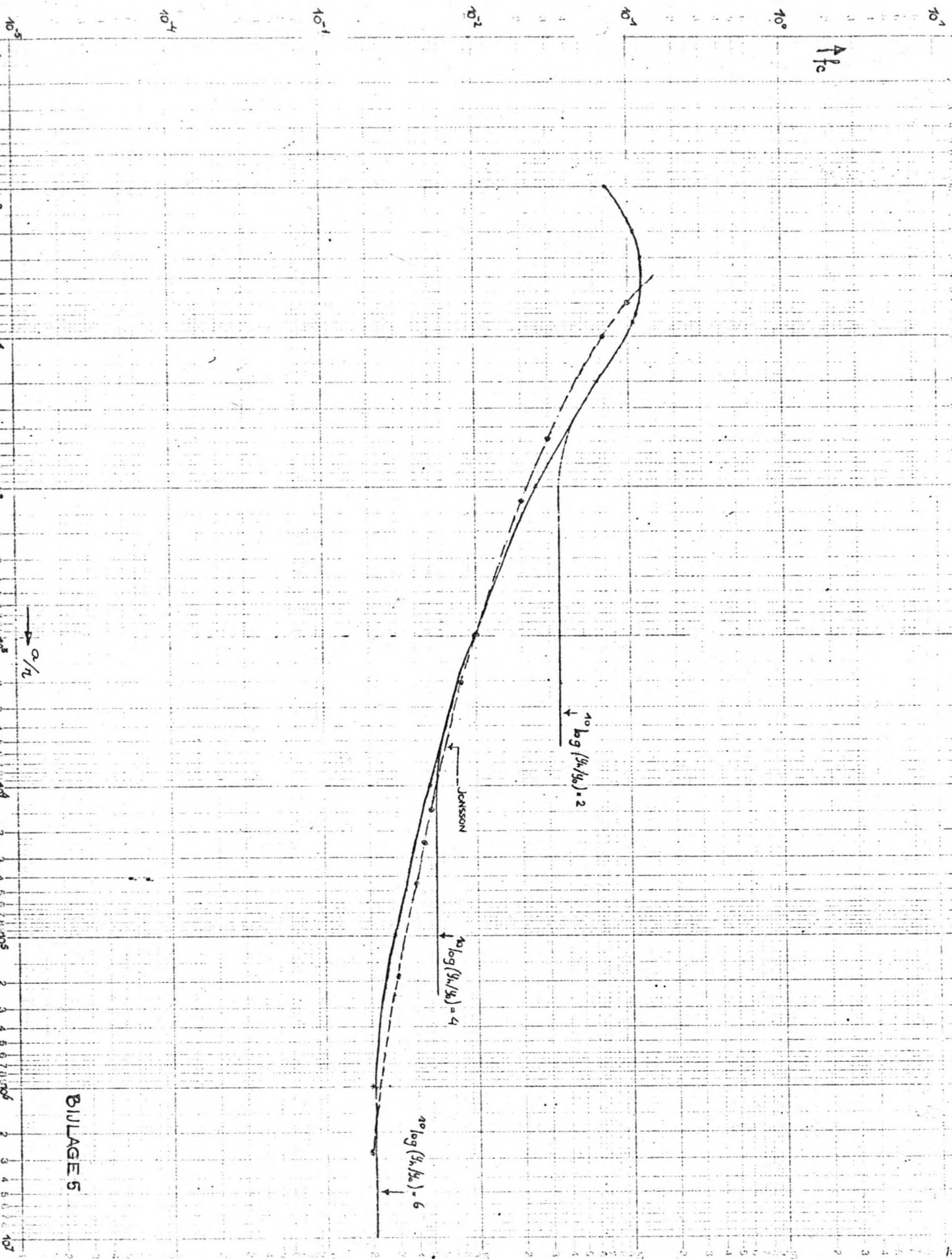
 VALSNELHEID W ALS FUNKTIE
 VAN DE GEMIDDELDE SNELHEID $\bar{u}$

AK. P.R. M.D.

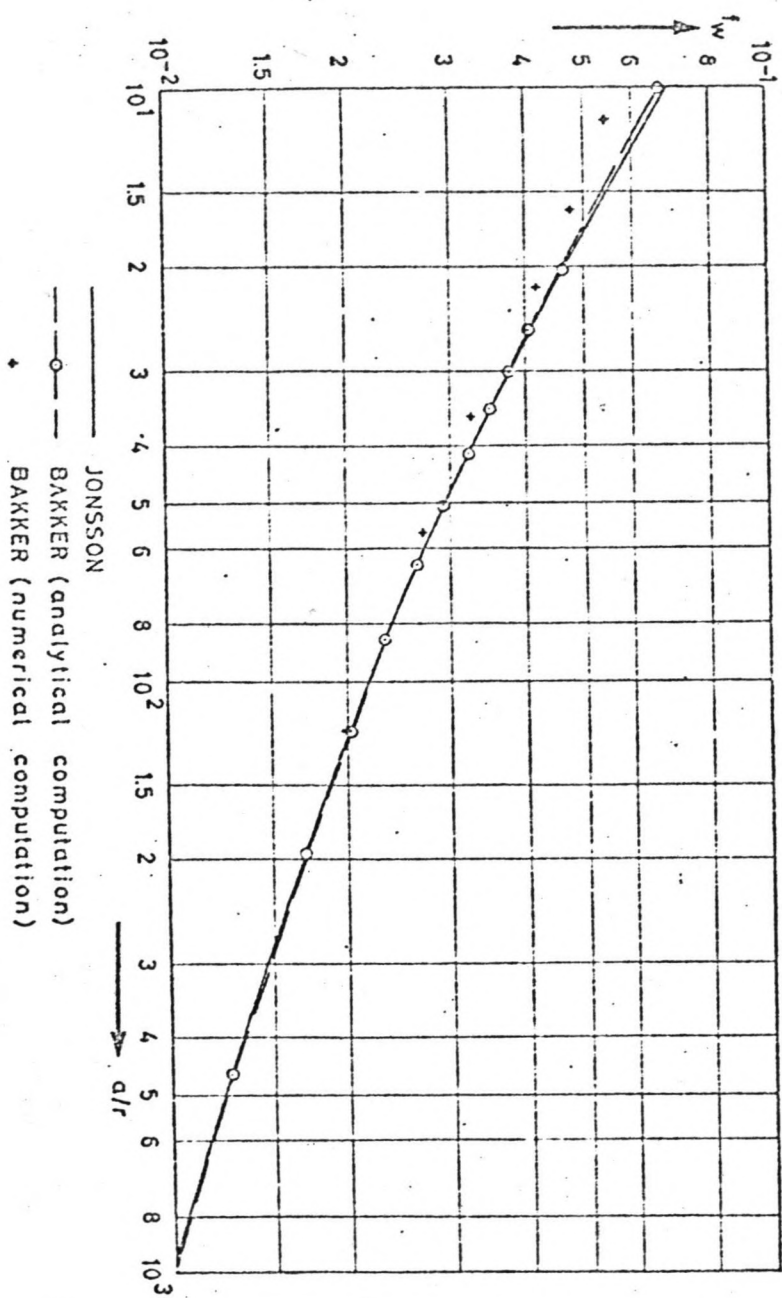
A1 75.121



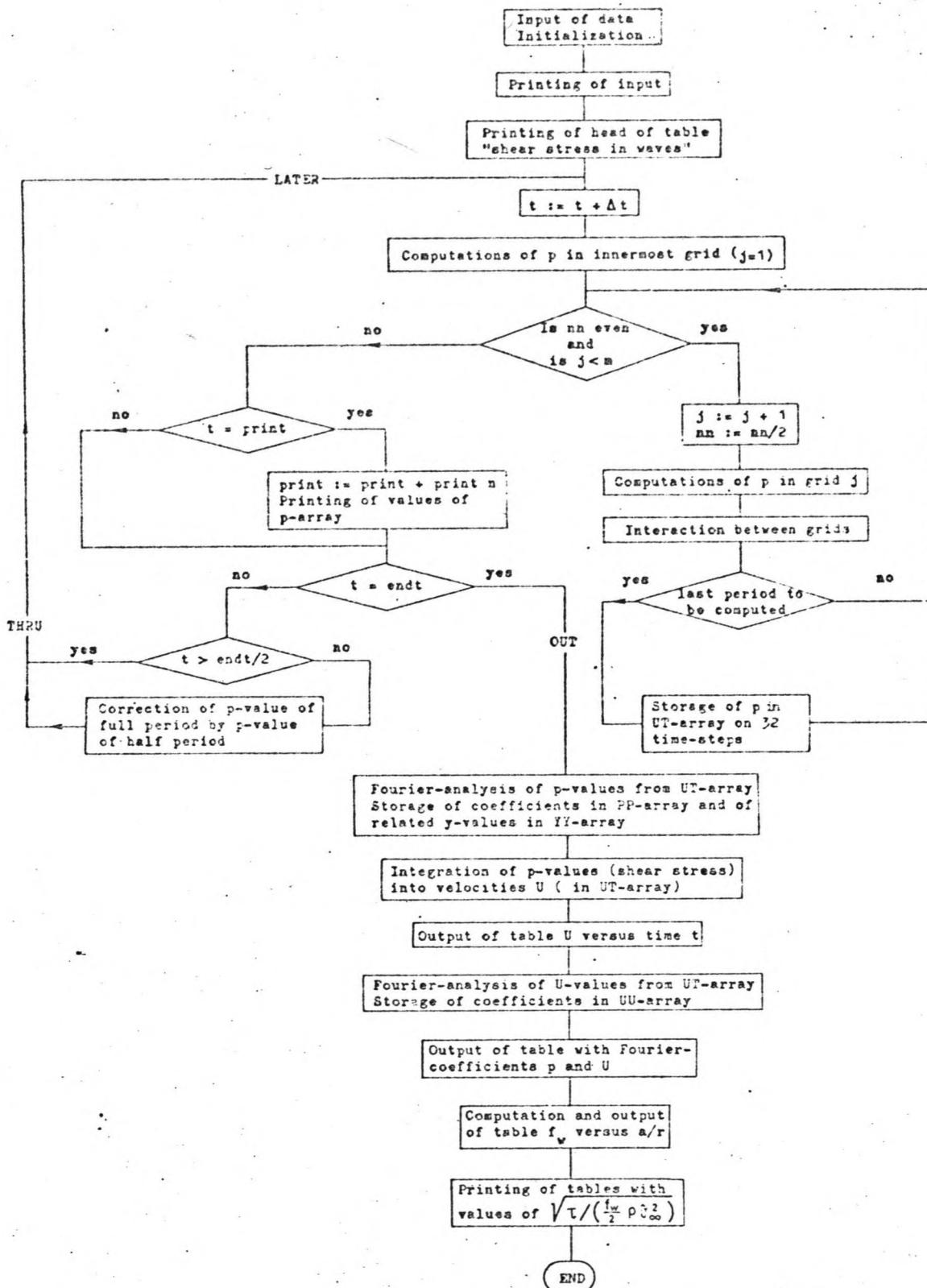
- ① $\frac{L}{y_h} = \kappa \frac{y}{y_h}$
- ② $\frac{L}{y_h} = 2\kappa \sqrt{1 - \frac{y}{y_h}} \left(1 - \sqrt{1 - \frac{y}{y_h}} \right)$ (von Kármán)
- ③ $\frac{L}{y_h} = \kappa \frac{y}{y_h} \sqrt{1 - \frac{y}{y_h}}$
- ④ metingen van Coleman (*)



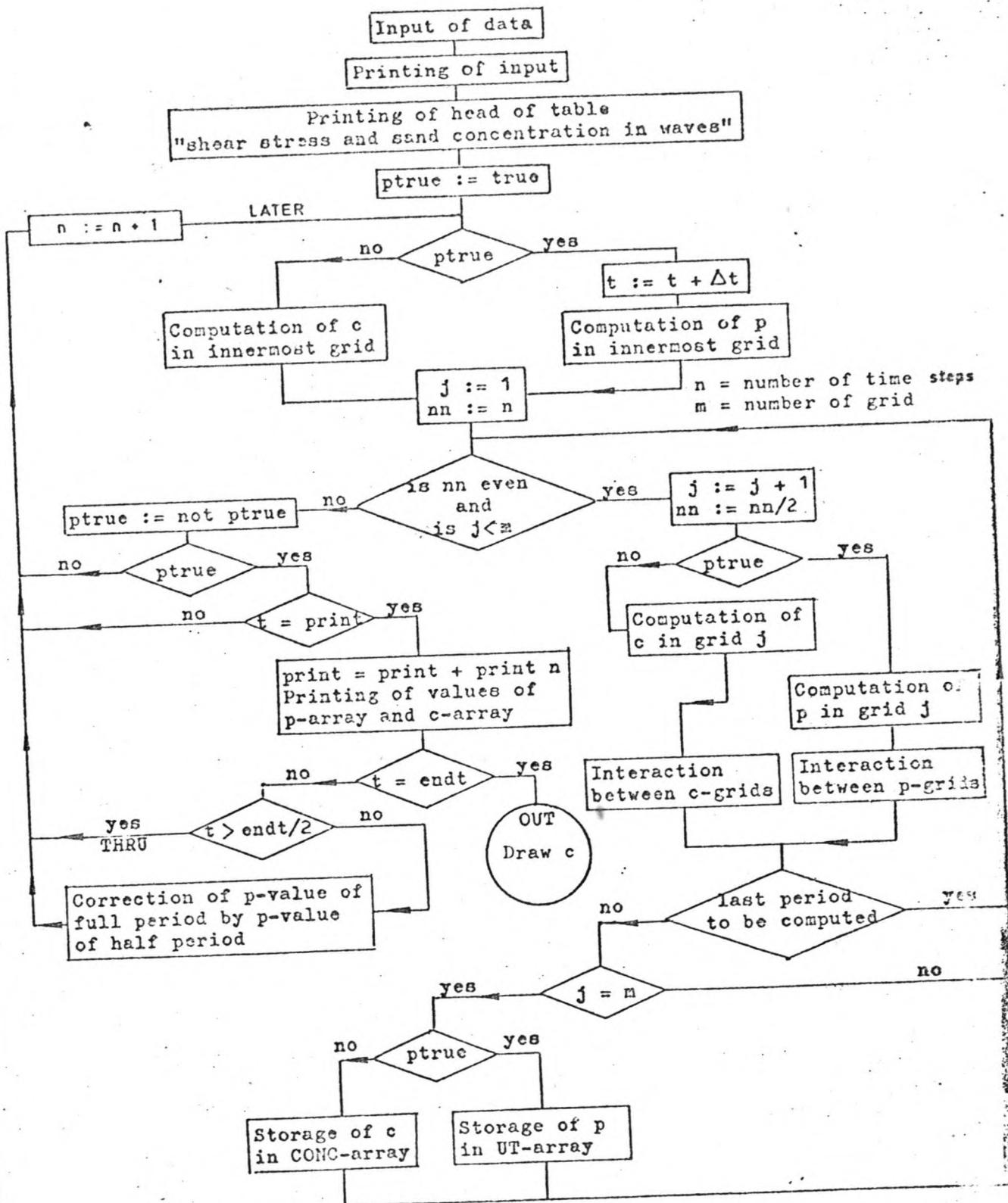
BULAGE 5b

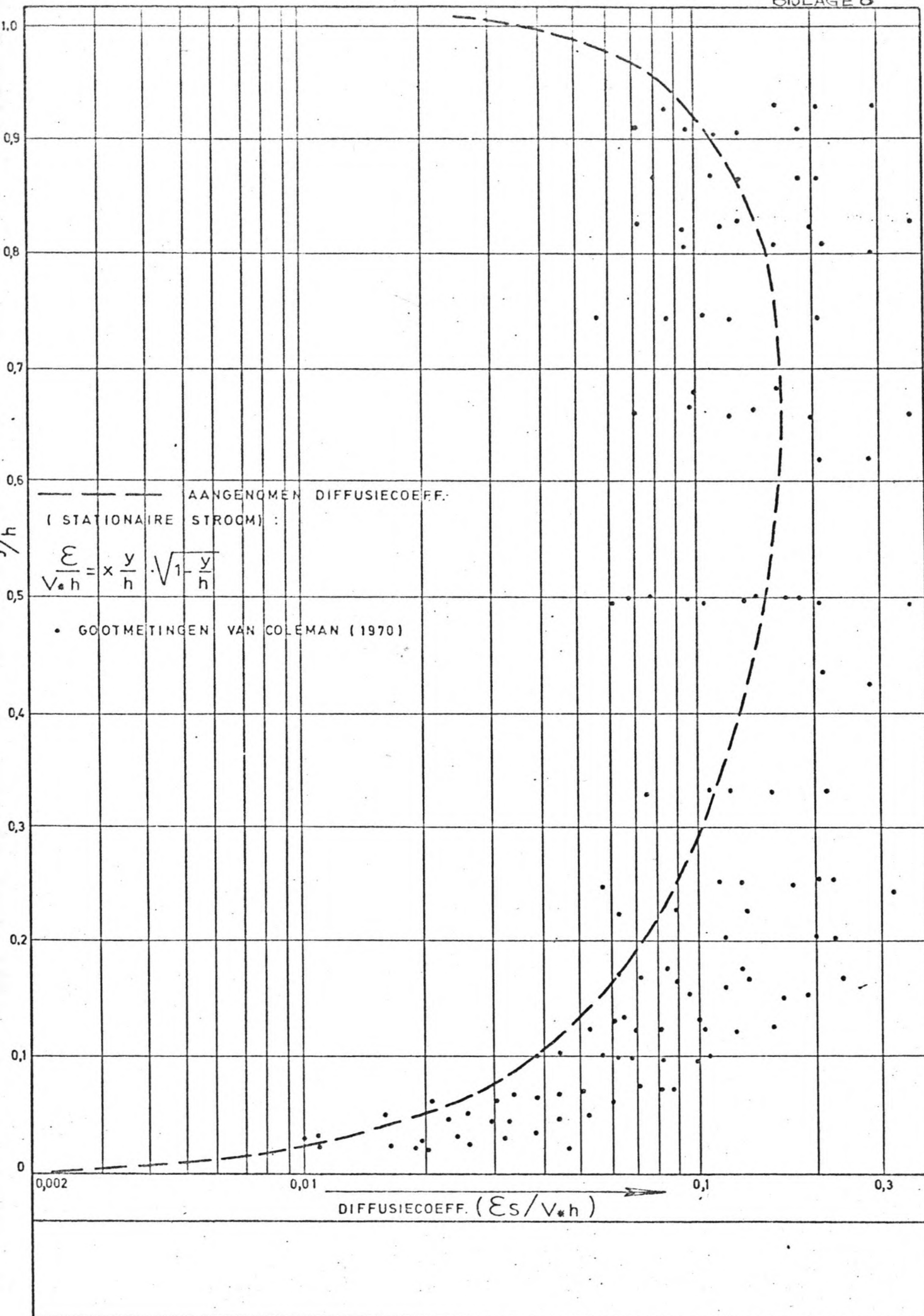


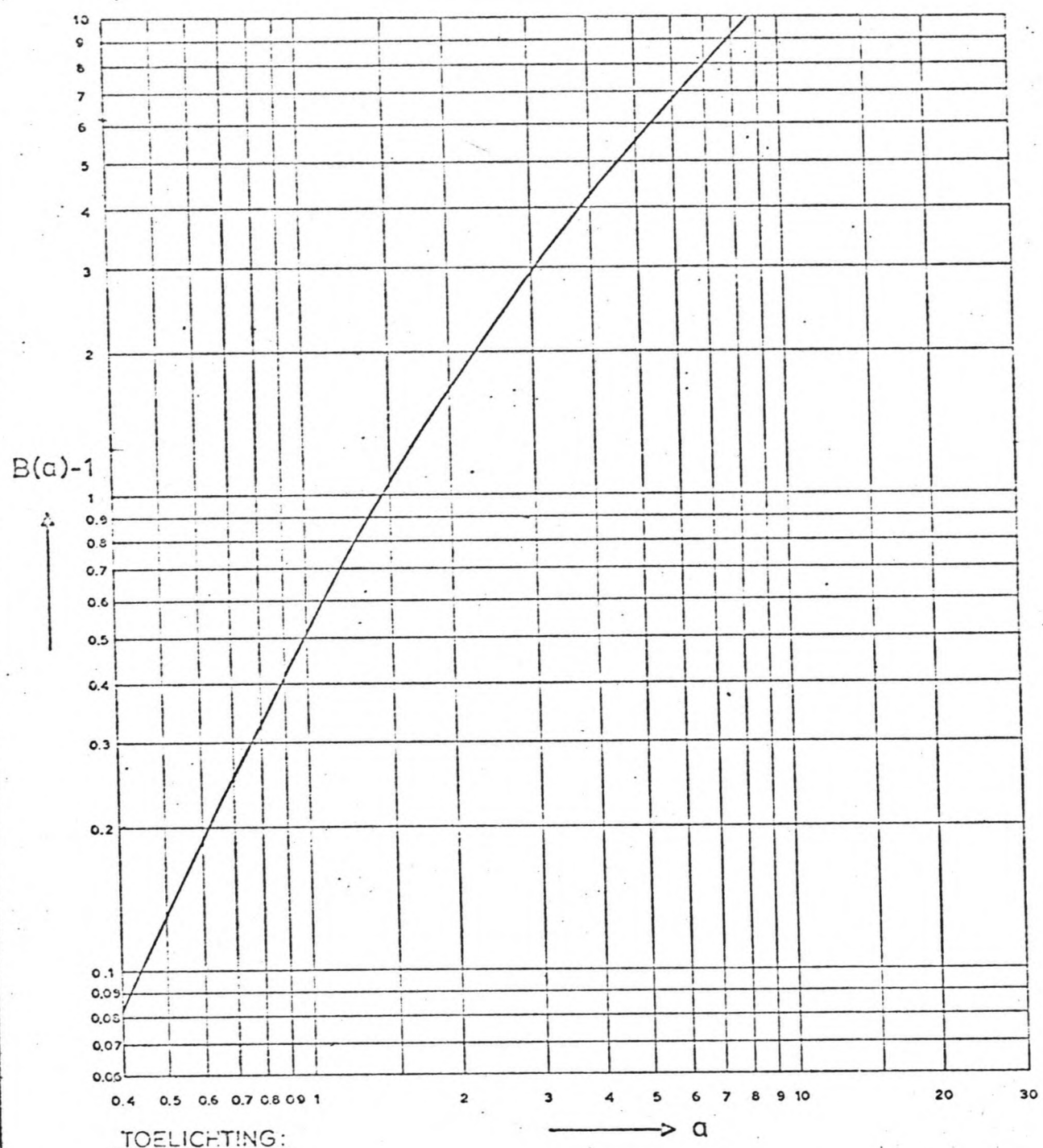
FLOW DIAGRAM TAI-PROGRAM - SHEAR STRESS BY WAVES
 =====



STROOMSCHEMA SA1



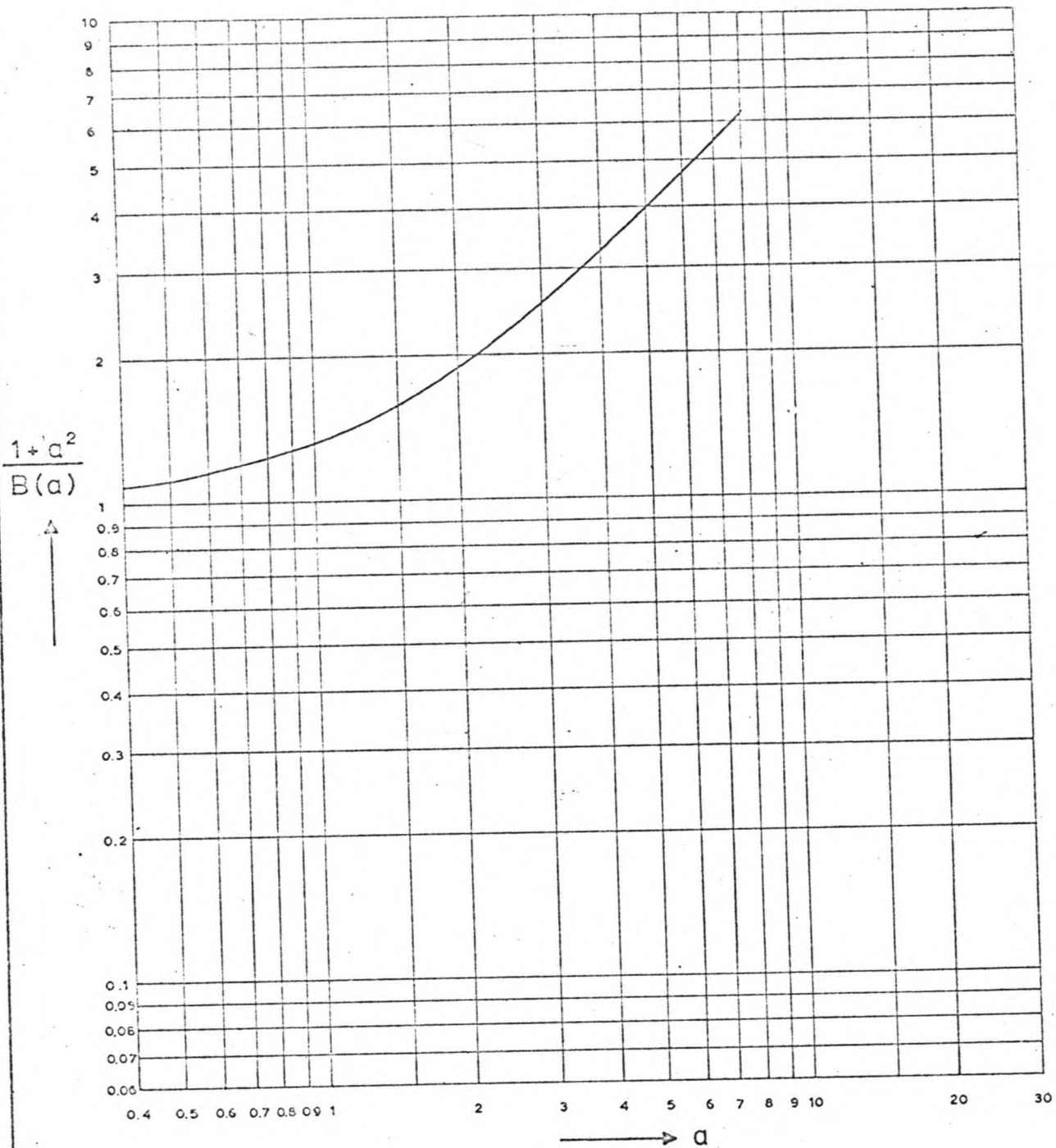




$$B(a) = \frac{2}{T} \int_{-T/4}^{T/4} (1 + a \sin \omega t) / 1 + a \sin \omega t / dt$$

FIGUUR OVERGENOMEN VAN BUKER ([], fig. III. 3-3)

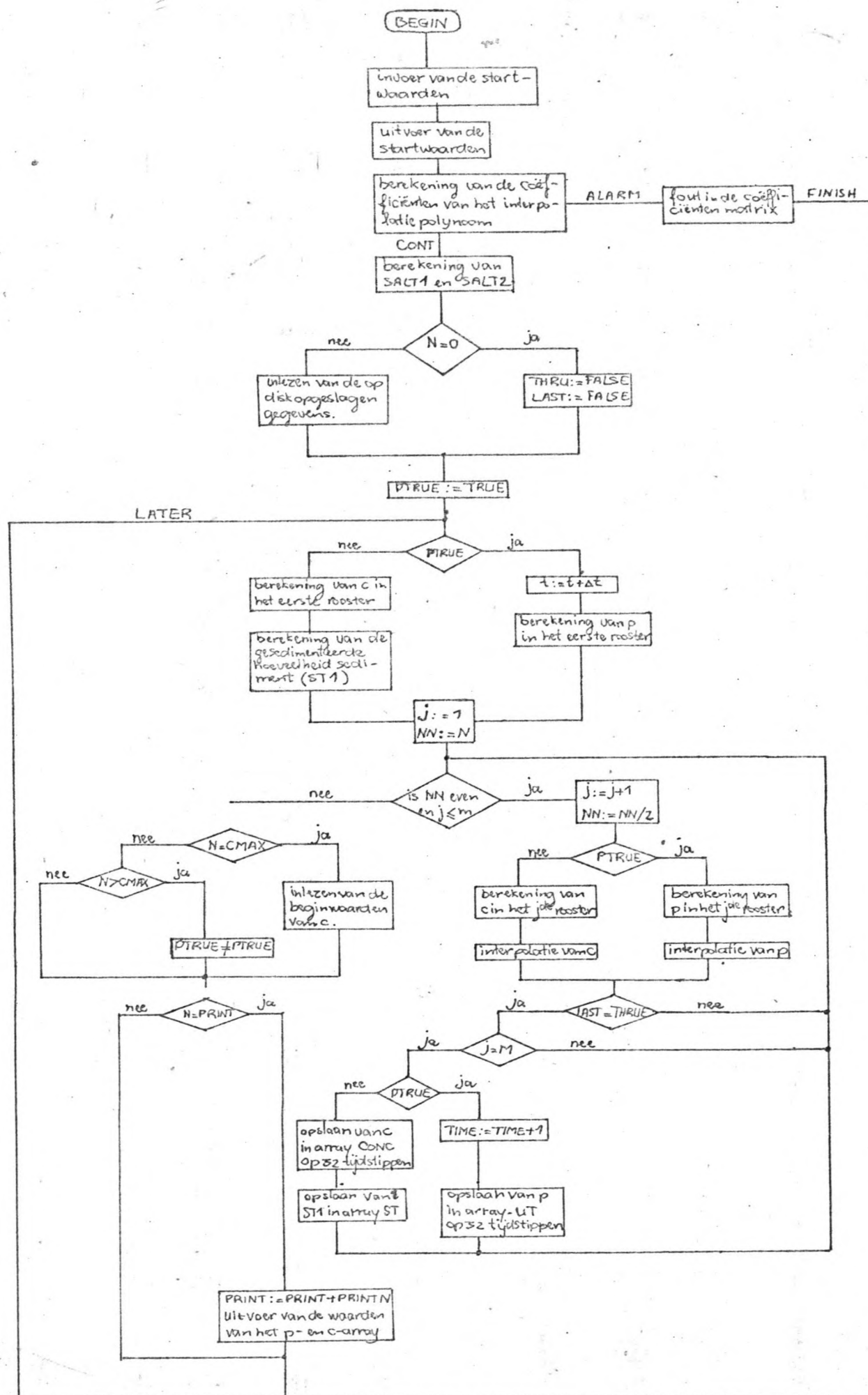
GET.	GEZ.	GEC.	AKK.	WAARDEN VAN B(a) -1, VOLGENS BUKER []	A1
A.S.S.					

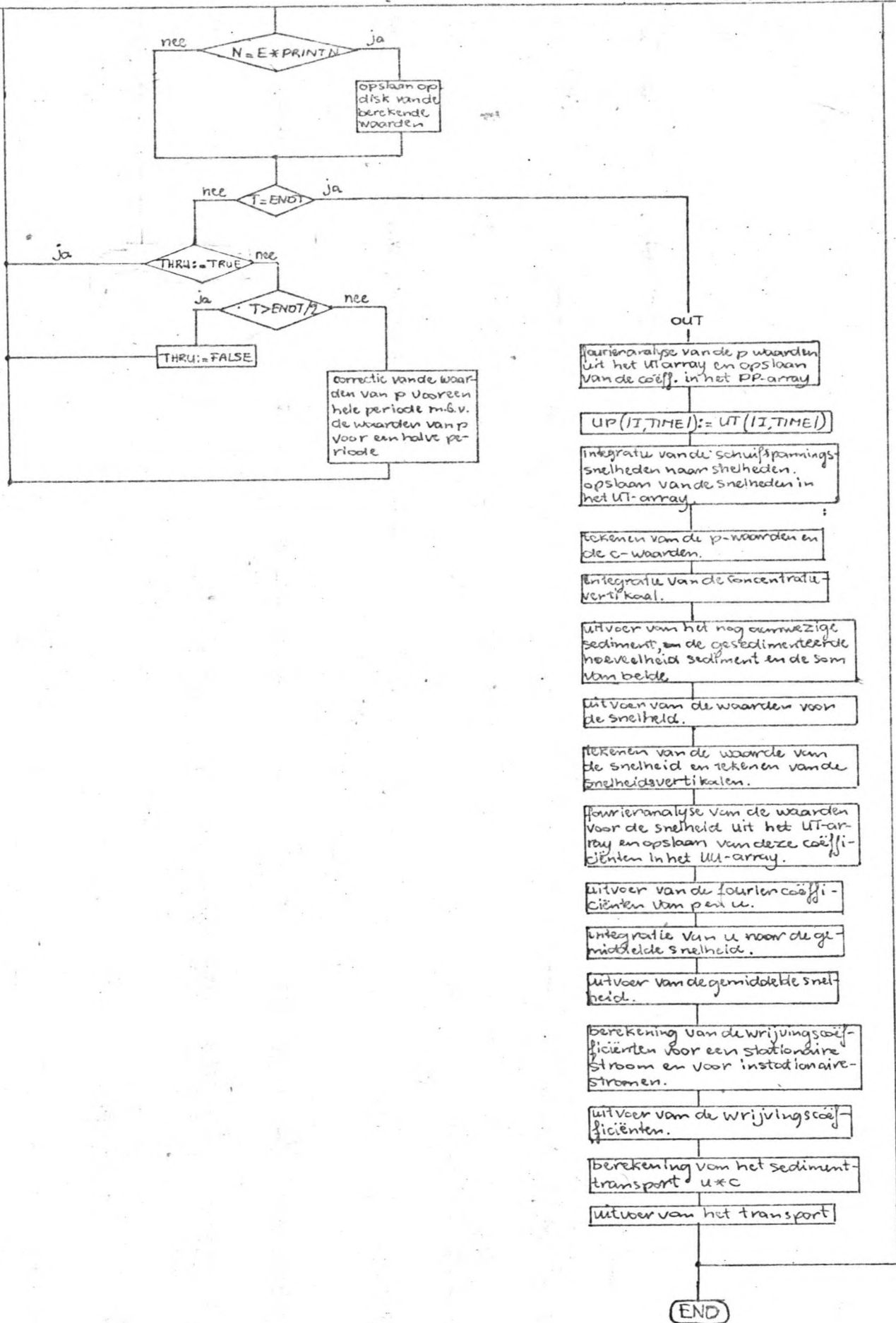


GET.	GEZ.	GEC.	AKK.
A.S.B.			

A1

STROOMSCHEMA SG1






```

58 'END';
59 REAL MAXX,MAXY,MINX,MINY,SCHLX1,SCHLX2,SCHLY,SCHLX;
60 'BEGIN' PUNT,PUTTEN,GETATST,OSTB;
61 'INTEGER' GETALST,YY,P,POSG,I,N,M,AANTP,AANTP:=BG-G+1;
62 PUNT:=TRUE;GETATST:=FALSE;
63 'BEGIN'
64 'INTEGER' ARRAY,PRINT(/O:POS/);
65 'ARRAY' X(/1:BLADH,1:AANTL/);
66 MAXX:=X(/G,1/);MINX:=X(/G,1/);
67 'FOR' S:=G,STEP:1,UNTIL BG,DO
68 'FOR' T:=1,STEP:1,UNTIL AANTL,DO
69 'BEGIN' IF X(/S,T/)>MAXX THEN MAXX:=X(/S,T/);
70 'IF' X(/S,T/)<MINX THEN MINX:=X(/S,T/);
71 'END';
72 MAXY:=Y(/BG,1/);
73 MINY:=Y(/G,1/);
74 'FOR' S:=G,STEP:1,UNTIL BG,DO
75 'FOR' T:=1,STEP:1,UNTIL AANTL,DO
76 'BEGIN' IF Y(/S,T/)>MAXY THEN MAXY:=Y(/S,T/);
77 'IF' Y(/S,T/)<MINY THEN MINY:=Y(/S,T/);
78 'END';
79 OSTB:=(MINY=Y(/G,1/));
80 SCHLX:=(MAXX-MINX)/(POS-1);
81 BUTTEN:=MINX<0|MAXX<0;
82 POSO:=-MINX/SCHLX;
83 SCHLY:=(MAXY-MINY)/(BLADH-1);
84 'FOR' P:=1,STEP:1,UNTIL AANTL,DO
85 'BEGIN' X(/PLADH,P/):=X(/BG,P/)/SCHLX;
86 N:=BLADH-1;
87 M:=BG;
88 'TERUG';
89 'IF' SCHLY*N<Y(/M-1/)-MINY+SCHLY*OSTB;
90 SCHLY*N<MAXY-Y(/M-1/)+SCHLY*OSTB THEN
91 'BEGIN' M:=M-1;
92 'IF' M<0 THEN 'GOTO' STOP;
93 'GOTO' TERUG;
94 N:=BLADH-1;
95 M:=BG;
96 'TERUG';
97 'IF' SCHLY*N<Y(/M-1/)-MINY+SCHLY*OSTB;
98 SCHLY*N<MAXY-Y(/M-1/)+SCHLY*OSTB THEN
99 'BEGIN' M:=M-1;
100 'IF' M<0 THEN 'GOTO' STOP;
101 'GOTO' TERUG;
102 'END';
103 'IF' OSTB THEN
104 X(/N,P/):=(MAXY-Y(/M/)-SCHLY*(N-1))/(Y(/M-1/)-Y(/M/))*X(/M-1,P/)-X(/
105 M,P/))+X(/M,P/))/SCHLX ELSE
106 X(/N,P/):=((Y(/M/)-MINY-SCHLY*(N-1))/(Y(/M/)-Y(/M-1/)))*
107 (X(/M-1,P/)-X(/M,P/))+X(/M,P/))/SCHLX;
108 N:=N-1;
109 'GOTO' TERUG;
110 STOP:XX(/1,P/):=X(/G,P/)/SCHLX;
111 'END';
112 I:=-1;
113 'FOR' Y:=BLADH,STEP:-1,UNTIL 1,DO
114 'FOR' V:=0,STEP:0,STEP:1,UNTIL POS,DO
115 'PRINT'(/P/):=99;
116 'FOR' P:=1,STEP:1,UNTIL AANTL,DO
117 'BEGIN' GETAL:=X(/V,P/)+POSO;
118 'IF' GETALST THEN GETAL:=GETAL<0|SETAL>POS;
119 'IF' GETAL<0 THEN GETAL:=0; 'IF' GETAL>POS THEN GETAL:=POS;
120 'PRINT'(/GETAL/):=P;
121 'END'; 'IF' BUTTEN THEN 'BEGIN'
122 'END';
123
124
125
126
127
128
129
130
131
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133
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137
138
139

```

PRO01E00
 PRO01S10
 PRO01F00
 PRO01G00
 PRO01I00
 PRO01J00
 PRO01K00
 PRO01L00
 PRO01M00
 PRO01N00
 PRO01O00
 PRO01P00
 PRO01Q00
 PRO01R00
 PRO01S00
 PRO01T00
 PRO01U00
 PRO01V00
 PRO01W00
 PRO01X00
 PRO01Y00
 PRO01Z00
 PRO02A00
 PRO02B00
 PRO02C00
 PRO02D00
 PRO02E00
 PRO02F00
 PRO02G00
 PRO02H00
 PRO02I00
 PRO02J00
 PRO02K00
 PRO02L00
 PRO02M00
 PRO02N00
 PRO02O00
 PRO02P00
 PRO02Q00
 PRO02R00
 PRO02S00
 PRO02T00
 PRO02U00
 PRO02V00
 PRO02W00
 PRO02X00
 PRO02Y00
 PRO02Z00
 PRO03A00
 PRO03B00
 PRO03C00
 PRO03D00
 PRO03E00
 PRO03F00


```

242      INTEGER(O,M);
243      INTEGER(O,ENDY);
244      INTEGER(O,PRINTN);
245      INTEGER(O,ENDI);
246      INREAL(O,M);
247      ININTEGER(O,E);
248      ININTEGER(O,N);
249      ININTEGER(O,DELAD);
250      ININTEGER(O,ROVEAN);
251      ININTEGER(O,WAY);
252      INREAL(O,R);
253      INREAL(O,DELH);
254      INREAL(O,CSTART);
255      MWM:=3*4;
256      YMAX:=2*4*ENDY;
257      YMAX:=2*4*ENDY;
258      LIMIT:=1;MWM<32 THEN 32 ELSE MWM;
259      BEGIN ARRAY P, HALF(1:5,1:M), YV(1:5,1:M), PP, UU(1:7,0:MWM/1),
260      XXUT,XUT(1:32,1:13/), YUT(1:32/), UMEAN(1:5,1:M/1),
261      UT(1:5,1:32/), UCOS1, USIN(1:1:2/), C(1:5,1:M/1),
262      FC(1:5,1:32/), UP(1:5,1:32/), A(1:7/), AA(1:7/), CC(1:5,1:15/),
263      AX,AXX(1:7,1:5/), AA(1:7/), AA(1:7/), AA(1:7/),
264      UP(1:5,1:32/), CONC(1:5,1:32/), CINT(1:1:32/),
265      CTO(1:1:32/), ST(1:1:32/);
266      ININTEGER ARRAY CUTPUT(1:11,1:2/);
267      BOOLEAN EVEN, NEVEN, THRU, LAST, PTRUE;
268      PROCEDURE STORE(AR, ARAY); ARAY*AR, ARAY;
269      BEGIN
270      *COMMENT THIS PROCEDURE IS MEANT FOR STORAGE OF THE FINAL
271      *RESULTS OF COMPUTATIONS CARRIED OUT IN THE AUXILIARY
272      *ARRAY AR (GIVING AR AT ONE CERTAIN TIME) IN THE
273      *ARRAY ARAY, WHICH HAS THE TWO DIMENSIONS Y (LEVEL)
274      *AND TIME:
275      ARRAY(1,TIME/):=AR(1,1/);
276      ARRAY(2,TIME/):=AR(2,1/);
277      FOR J:=1 STEP 1 UNTIL M-1 DO
278      BEGIN
279      ARRAY(3*J,TIME/):=AR(3,J/);
280      ARRAY(3*J+1,TIME/):=AR(4,J/);
281      ARRAY(3*J+2,TIME/):=AR(5,J/);
282      END;
283      ARRAY(MWM,TIME/):=AR(13,M/);J:=M;
284      END STORE;
285      PROCEDURE PLINE(ARAY); ARAY*ARAY;
286      *COMMENT THIS PROCEDURE IS USED FOR PRINTING ONE LINE OF
287      *ELEVEN P OR C-VALUES A1 ELEVEN CHOSEN LEVELS:
288      FOR A:=1 STEP 1 UNTIL 11 DO
289      BEGIN
290      I:=OUTPUT(A,1/);
291      J:=OUTPUT(A,2/);
292      PUT(1,1,5,ARAY(1,J/));
293      END PLINE;
294      *END PLINE;
295      *PROCEDURE GRID(A1); VALUE A1 INTEGER A1;
296      *COMMENT IN THIS PROCEDURE THE POINT P(I,A/) IS CALCULATED WHEN PTRUE,
297      *ELSE C(1,A/) IS CALCULATED.

```

```

SG1 360
SG1 390
SG1 400
SG1 410
SG1 420
SG1 430
SG1 440
SG1 450
SG1 460
SG1 470
SG1 480
SG1 490
SG1 500
SG1 510
SG1 520
SG1 530
SG1 540
SG1 550
SG1 560
SG1 570
SG1 580
SG1 590
SG1 600
SG1 610
SG1 620
SG1 630
SG1 640
SG1 650
SG1 660
SG1 670
SG1 680
SG1 690
SG1 700
SG1 710
SG1 720
SG1 730
SG1 740
SG1 750
SG1 760
SG1 770
SG1 780
SG1 790
SG1 800
SG1 810
SG1 820
SG1 830
SG1 840
SG1 850
SG1 860
SG1 870
SG1 880
SG1 890
SG1 900
SG1 910
SG1 920

```



```
288      *BEGIN*PNU:=PNIEM;
289      PNIEM:=P(I+1,A/);
290      *IF*PTRUE*THEN*
291      *BEGIN*PKOUD:=PKNU;
292      PKNU:=PKNIEM;
293      PKNIEM:=PNIEM*ABS(PNIEM);
294      P(I,A/):=PNU+Y*SQRT(1-Y/YMAX)*DELITY*(PKOUD-2*PKNU+PKNIEM)+SGI
295      Y*SQRT(1-Y/YMAX)*SALT2;
296      *END*ELSE*
297      *BEGIN*EPSOLD:=EPSNEM;
298      COLD:=CNCM;
299      CNCM:=CNCM;
300      EPSNEM:=.5*(Y+.5*DELITY)*SQRT(1-(Y+.5*DELITY)/YMAX)*
301      ABS(PNU+PNIEM);
302      *BEGIN*
303      CNCM:=C(I/I+1,A/);
304      *IF*A=M*AND*I=3*THEN*
305      *BEGIN*
306      C(I,M/):=CNCM+DELITY*(CNCM*(24*EPSNEM+16*MY)
307      +CNCM*(-30*EPSNEM-15*EPSOLD+5*MY)+15*COLD*(EPSOLD
308      -MY)+6*C(I/5,M-1/)*(EPSNEM-MY))/15;
309      C(I,M/):=CNCM+4*DELITY*(-CNCM*(12*EPSNEM+8*MY)
310      +CNCM*(15*EPSNEM-10*MY)
311      -3*C(I/5,M-1/)*(EPSNEM-MY))/15;
312      *END*
313      *IF*C(I/4,M/)<0*THEN*C(I/4,M/):=0;
314      *ELSE*
315      C(I,A/):=CNCM+DELITY*(EPSNEM*MY)*CNCM
316      -(EPSNEM+EPSOLD)*CNCM+(EPSOLD-MY)*COLD);
317      *IF*C(I,A/)<0*THEN*C(I,A/):=0;
318      *END*
319      Y:=Y+DELITY;
320      *END*GRID;
321      *PROCEDURE*DRAC(A,B,C,D,E,F,G);
322      *COMMENT* THIS PROCEDURE TAKES CARE FOR THE LAY-OUT OF THE SEMI-
323      GRAPHICAL PLOT OF THE POINTS CONC( A THROUGH G, TIME)
324      AT ALL 32 VALUES OF TIME;
325      *VALUE*A,B,C,D,E,F,G; *INTEGER*A,B,C,D,E,F,G;
326      *BEGIN*
327      PAGE(1):OUTSTRINGS(1,('CONCENTRATION AS FUNCTION OF TIME FOR VARIOUS
328      LEVELS
329      *FOR*I:=1*STEP*1*UNTIL*32*DO*
330      *BEGIN*YUT(I/):=(32-I+1)*.03125;
331      K:=0;
332      *FOR*J:=A,B,C,D,E,F,G*DO*
333      *BEGIN*K:=K+1;
334      *IF*CONC(J,32-I+1/)<0*THEN*
335      XUT(I,K/):=(K-1)*.75*ELSE*
336      XUT(I,K/):=CONC(J,32-I+1/)+(K-1)*.75;
337      *END*
338      *FOR*K:=8,9,10,11,12,13*DO* XUT(I,K/):=(K-7)*.75;
339      *END*
340      LINE(1,1);
341      OUTSTRING(1,('CURVE
342      *FOR*K:=1*STEP*1*UNTIL*7*DO*
343      *BEGIN*TYPE(1,K);
344
```

```

346      BLANK(1,8);
347      *END*;
348      LINE(1,1);
349      OUTSTRING(1,('LEVEL YSTAR ='))';
350      *FOR J:=A,B,C,D,E,F,G,DO*
351      AFIX(1,2,3,('IF J=0 THEN J:=ELSE YV(J/J)):LINE(1,1);
352      DRAW(1,32,13, 92,50,4,5,XUT,YUT);
353
354      *END*;
355      *PROCEDURE DRAW(A,B,C,D,E,F,G);
356      *COMMENT* THIS PROCEDURE TAKES CARE FOR THE LAY-OUT OF THE SEMI-
357      *GRAPHICAL PLOT OF THE POINTS P AND U (A THROUGH G, TIME)
358      *AT ALL 32 VALUES OF TIME;
359      *VALUE A,B,C,D,E,F,G; *INTEGER A,B,C,D,E,F,G;
360      *BEGIN*
361      *FOR J:=1,STEP 1,UNTIL 32,DO*
362      *BEGIN YUT(1/J):=(32-I+1)*.03125;
363      *K:=0;
364      *FOR J:=A,B,C,D,E,F,G,DO*
365      *BEGIN K:=K+1;
366      *XUT(1,K):=UP1(J,32-1+1/J);
367      *END*;
368
369      *END*;
370      LINE(1,1);
371      OUTSTRING(1,('CURVE ='))';BLANK(1,3);
372      *FOR K:=1,STEP 1,UNTIL 7,DO*
373      *BEGIN TYPE(1,K);
374      *BLANK(1,6);
375      *END*;
376
377      LINE(1,1);
378      OUTSTRING(1,('LEVEL YSTAR ='))';
379      *FOR J:=A,B,C,D,E,F,G,DO*
380      AFIX(1,2,3,('IF J=0 THEN J:=ELSE YV(J/J)):LINE(1,1);
381      DRAW(1,32,7,100,49,4,5,XUT,YUT);
382
383      *END*;
384
385      *PROCEDURE FORIER(ARRAY); *ARRAY ARRAY;
386      *BEGIN *REAL U,ALLU,MAXU,MINU,PHI;
387      *ARRAY ALLCOS,ALLSIN(1:2/);
388      *ANGLE:=PI/16;
389      *FOR I:=0,STEP 1,UNTIL MM*DO*
390      *BEGIN ALLU:=0;
391      *MAXU:=MINU:=0;
392      *FOR J:=1,2,DO* ALLCOS(J/J):=ALLSIN(J/J):=0;
393      *FOR TIME:=1,STEP 1,UNTIL 32,DO*
394      *BEGIN U:=UT(1,TIME/);
395      *ALLU:=ALLU+U;
396      *FOR J:=1,2,DO*
397      *BEGIN
398      *ALLCOS(J/J):=ALLCOS(J/J)+U*COS(J*TIME*ANGLE);
399      *ALLSIN(J/J):=ALLSIN(J/J)+U*SIN(J*TIME*ANGLE);
400      *END*;
401      *IF U>MAXU THEN MAXU:=U;
402      *IF U<MINU THEN MINU:=U;
403      *END*;
404      *ARRAY(1,1/):=ALLU/32;
405      *FOR J:=1,2,DO*

```

```

412      *BEGIN*
413      ARAY(2*J,1/):=SQRT(ALLCOS(J/))*2*ALLSIN(J/)*2)/16:SG1 2030
414      *IF ARAY(2*J,1/)>.00001 THEN*
415      *BEGIN*
416      PHI:=ALLSIN(J/)/ALLCOS(J/);
417      PHI:=ARCTAN(PHI)*180/PI;
418      *IF ALLCOS(J/)<0 THEN PHI:=PHI+90 ELSE*
419      PHI:=PHI+270;
420      ARAY(2*J+1,1/):=PHI;
421      *END* ELSE ARAY(2*J+1,1/):=0;
422      *END*
423      ARAY(5,1/):=MAXU;
424      ARAY(7,1/):=MINU;
425      *END* ARAY CONTAINS RESP. THE MEAN, THE MODULE AND PHASE OF
426      FIRST HARMONIC, IDEM OF SECOND HARMONIC, MAXIMUM AND
427      MINIMUM VALUE OF THE VARIABLE, STORED IN UT-ARRAY;
428      *END*
429      *PROCEDURE LINGAUI, EPS, D, A, ALARM;
430      *VALUE N: INTEGER; N: 'REAL' EPS, D: 'ARRAY' A: 'LABEL' ALARM; 'CODE' LINGAU 1
431      *COMMENT* BETEKENIS VAN DE FORMELE PARAMETERS
432      N I ORDE VAN DE MATRIX A.
433      EPS I TOLERANTIEMAARDE.
434      ALARM D WORDT VOOR EEN PIVOT GELDT (A(1,1)) < EPS,
435      D DETERMINANTIEMAARDE VAN A
436      A I DE COEFFICIENTENMATRIX MET ALS (N+1)E KOLOM
437      O DE BEKENDE VECTOR.
438      O DE ONBEKENDE VECTOR STAAT NA AFDOP ALS
439      (N+1)E KOLOM IN A.
440      DE MATRIX A IS NA HET PROCES VERSTOORD;
441      PI:=4*ARCTAN(1);
442      NPER:=2*(M-ENDY+5);
443      CMAX:=CSTART+NPER;
444      *COMMENT* NPER=NUMBER OF TIME STEPS IN 1 WAVE PERIOD
445      *NEW PRINTING OF INPUT AND INITIALISATIONS*
446      NHALF:=NPER/2;
447      INITSAY(0,OUTPUT);
448      OUTSTRING(1,('INPUT:')):LINE(1,1);
449      OUTSTRING(1,('====')):LINE(1,2);
450      OUTSTRING(1,('M')) = (''):AFIX(1,8,0,M):LINE(1,1);
451      OUTSTRING(1,('ENDY')) = (''):FIX(1,8,0,ENDY):LINE(1,1);
452      OUTSTRING(1,('PRINTN')) = (''):AFIX(1,8,0,PRINTN):LINE(1,1);
453      OUTSTRING(1,('ENDT')) = (''):AFIX(1,8,0,ENDT):LINE(1,1);
454      OUTSTRING(1,('M')) = (''):FIX(1,8,5,M):LINE(1,1);
455      OUTSTRING(1,('E')) = (''):AFIX(1,8,0,E):LINE(1,1);
456      OUTSTRING(1,('N')) = (''):AFIX(1,8,0,N):LINE(1,1);
457      OUTSTRING(1,('DELRO')) = (''):AFIX(1,8,0,DELRO):LINE(1,1);
458      OUTSTRING(1,('ROMEAN')) = (''):AFIX(1,8,0,ROMEAN):LINE(1,1);
459      OUTSTRING(1,('RAY')) = (''):AFIX(1,8,0,RAY):LINE(1,1);
460      OUTSTRING(1,('R')) = (''):AFIX(1,8,5,R):LINE(1,1);
461      OUTSTRING(1,('DELH')) = (''):AFIX(1,8,5,DELH):LINE(1,1);
462      OUTSTRING(1,('CSTART')) = (''):AFIX(1,8,5,CSTART):LINE(1,1);
463      *FOR J:=1 STEP 1 UNTIL 11*DO
464      *BEGIN LAYOUT(OUTPUT(J,1/),OUTPUT(J,2/));
465      SG1 2030
466      SG1 2040
467      SG1 2050
468      SG1 2060
469      SG1 2070
470      SG1 2080
471      SG1 2090
472      SG1 2100
473      SG1 2110
474      SG1 2120
475      SG1 2130
476      SG1 2140
477      SG1 2150
478      SG1 2160
479      SG1 2170
480      SG1 2180
481      SG1 2190
482      SG1 2200
483      LINGAU 1
484      LINGAU 2
485      LINGAU 3
486      LINGAU 4
487      LINGAU 5
488      LINGAU 6
489      LINGAU 7
490      LINGAU 8
491      LINGAU 9
492      LINGAU 10
493      LINGAU 11
494      LINGAU 12
495      LINGAU 13
496      SG1 2210
497      SG1 2220
498      SG1 2230
499      SG1 2240
500      SG1 2250
501      SG1 2260
502      SG1 2270
503      SG1 2280
504      SG1 2290
505      SG1 2300
506      SG1 2310
507      SG1 2320
508      SG1 2330
509      SG1 2340
510      SG1 2350
511      SG1 2360
512      SG1 2370
513      SG1 2380
514      SG1 2390
515      SG1 2400
516      SG1 2410
517      SG1 2420
518      SG1 2430
519      SG1 2440
520      SG1 2450

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```

490      BLANK(1,2);
491      *END;*PAGE(1);
493      DELT:=1/INPER; DELV:=YMAX*2*(1-M-1); DELTY:=DELT/DELV/DELY;
495      *R:=1;
497      *FOR K:=1 STEP 1 UNTIL 7 DO*
499      *BEGIN *R:=R*K;
500      *CC(K/7):=2.5*(1-R)/K;
501      *CC(K/7):=2.5*DELT*(1-R-(1-R*R)/(K+1))/K;
502      *END;
503      *CC(0/1):=-2.5*LN(R);
504      *CC(15/1):=2.5*DELT*(1-R+R*LN(R));
505      *FOR I:=1 STEP 1 UNTIL 12 DO*
506      *FOR J:=0 STEP 1 UNTIL 7 DO* A(I,J):=0.0;
507      *COMMENT *CALCULATION OF COEFFICIENTS B(I,1:7,0:7/);
508      *FOR INNER GRIDS:
509      *FOR I:=1 STEP 1 UNTIL 6 DO*
510      *FOR J:=1 STEP 1 UNTIL 7 DO* A(I,1,J):=I*J;
511      *FOR J:=1 STEP 1 UNTIL 7 DO* A(I,7,J):=J*6*(J-1);
512      *FOR I:=1 STEP 1 UNTIL 7 DO*
513      *BEGIN *FOR J:=1 STEP 1 UNTIL 7 DO*
514      *AXX(J,K):=AX(J,K/);
515      *AXX(J,8/):=IF J=1 THEN 1.0 ELSE 0.0;
516      *END;
517      *LINGAU(7, 0.0, D, AXX, ALARM);
518      *FOR J:=1 STEP 1 UNTIL 7 DO* B(J,1/):=AXX(J,8/);
519      *END;
520      *FOR I:=1 STEP 1 UNTIL 4 DO*
521      *FOR J:=1 STEP 1 UNTIL 5 DO* A(I,1,J):=I*J;
522      *COMMENT *CALCULATION OF COEFFICIENTS B(I,0:4/);
523      *FOR OUTER GRID:
524      *FOR I:=1 STEP 1 UNTIL 4 DO*
525      *BEGIN *FOR J:=1 STEP 1 UNTIL 4 DO*
526      *AXX(J,K):=AX(J,K/);
527      *AXX(J,5/):=IF J=1 THEN 1.0 ELSE 0.0;
528      *END;
529      *LINGAU(4, 0.0, D, AXX, ALARM);
530      *FOR J:=1 STEP 1 UNTIL 4 DO*
531      *B(J,7,1/):=AXX(J,5/);
532      *END;
533      *FOR I:=1 STEP 1 UNTIL 12 DO*
534      *BEGIN *SUM:=0.0;
535      *FOR J:=1 STEP 1 UNTIL 6 DO* SUM:=SUM+B(I,1,J);
536      *R(1,0/):=-SUM;
537      *END;
538      *COMMENT *PRINT OF ARRAY R;
539      *OUTSTRING(1, (ELEMENTEN VAN MATRIX B)); LINE(1,2);
540      *FOR J:=0 STEP 1 UNTIL 7 DO*
541      *BEGIN *FOR I:=1 STEP 1 UNTIL 7 DO*
542      *FIX(13,9,B(I,1,J)); LINE(1,1);
543      *END;
544      *LINE(1,4);
545      *FOR J:=0 STEP 1 UNTIL 7 DO*
546      *BEGIN *FOR I:=9 STEP 1 UNTIL 12 DO*
547      *COEF 2460
548      *COEF 2470
549      *COEF 2480
550      *COEF 5
551      *COEF 10
552      *COEF 15
553      *COEF 20
554      *COEF 25
555      *COEF 30
556      *COEF 35
557      *COEF 40
558      *COEF 45
559      *COEF 50
560      *COEF 55
561      *COEF 60
562      *COEF 65
563      *COEF 70
564      *COEF 75
565      *COEF 80
566      *COEF 85
567      *COEF 90
568      *COEF 95
569      *COEF 100
570      *COEF 105
571      *COEF 110
572      *COEF 115
573      *COEF 120
574      *COEF 125
575      *COEF 130
576      *COEF 135
577      *COEF 140
578      *COEF 145
579      *COEF 150
580      *COEF 155
581      *COEF 160
582      *COEF 165
583      *COEF 170
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589      *COEF 200
590      *COEF 205
591      *COEF 210
592      *COEF 215
593      *COEF 220
594      *COEF 225
595      *COEF 230
596      *COEF 235
597      *COEF 240
598      *COEF 245
599      *COEF 250
600      *COEF 255
601      *COEF 256
602      *COEF 257
603      *COEF 258
604      *COEF 259
605      *COEF 259

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```

519      FIX(1,3,8*(I,J)):LINE(1,1);
561      *END*: PAGE(1): *GOTO* CNT;
564      ALARM:  OUTSTRING(1,('ERROR IN LINGAU:')): LINE(1,1);
567      OUTSTRING(1,('ABS. VALUE OF PIVOT LESS THAN EPS.')):
568      LINE(1,1): OUTSTRING(1,('PROGRAM TERMINATED.')):
570      *GOTO* FINISH;
571      CNT:=CNT+1; *IF* (CNT*(10**4)*SQRT((YMAX**2)*DELRO/(RMEAN*WAV))):
573      SALI2:=(31.97*(10**6)*DELRO/(RMEAN*WAV))*DELT;
574      SINDEL:=SIN(2*PI*DELT);
575      COSDEL:=COS(2*PI*DELT);
576      *IF* (XO*THEN
577      *BEGIN* INARAY(25,P);
579      INARAY(25,HALF);
580      INREAL(25,SIN);
581      INREAL(25,COSIN);
582      INREAL(25,T);
583      ININTEGER(25,PRINT);
584      ININTEGER(25,NT);
585      INARAY(25,UT);
586      INARAY(25,C);
587      INARAY(25,CONC);
588      ININTEGER(25,TIME);
589      ININTEGER(25,TIM);
590      INREAL(25,CNUL);
591      INREAL(25,LAST);
592      INDCLEAN(25,THRU);
593      *END*;
594      *IF* (N=0)*THEN*
596      *BEGIN* *FOR* I:=1*STEP*1*UNTIL*5*DO*
597      *FOR* J:=1*STEP*1*UNTIL*M*DO*
598      *BEGIN* P(I,J):=0;
600      HALF(I,J):=0;
601      C(I,J):=0;
602      *END*;
603      *FOR* I:=0*STEP*1*UNTIL*MM*DO*
604      *FOR* TIME:=1*STEP*1*UNTIL*32*DO*
605      *BEGIN* UT(I,TIME):=0;
607      CONC(I,TIME):=0;
608      *END*;
609      *FOR* TIME:=1*STEP*1*UNTIL*32*DO*
610      *BEGIN* CONC(MMM+1,TIME):=0;
611      STI(TIME):=0;
612      CINTI(TIME):=0;
613      CTOT(TIME):=0;
614      *END*;
615      STI:=0;
616      PRINT:=PRINT;
617      NT:=0;
618      CNUL:=0;
619      SINUS:=0;
620      COSIN:=1;
621      TIME:=0;
622      TIM:=0;
623      LAST:=FALSE;
624      THRU:=FALSE;
625      *END*;
626      BLANK(1,44);
627      *COMMENT* NOM HEADING;
628      OUTSTRING(1,('SHEAR STRESS VELOCITY AND SAND CONCENTRATIONS INSGI

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COEF 260

COEF 261

COEF 265

COEF 270

COEF 275

COEF 280

SGI 2490

SGI 2500

SGI 2510

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SGI 2970


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630 TIDAL WAVES'): LINE(1,1);
631 BLANK(1,44);
632 OUTSTRING(1,('=====');
633 ====='); LINE(1,2);
634 BLANK(1,41);
635 OUTSTRING(1,('VALUES OF SQR(T/2+TAU/FC/RHO)/U-MEAN AND OF CONSG
636 C')));
637 LINE(1,3);
638 OUTSTRING(1,('Y-SCALE: 1=KAPPA*U*MEAN*I*SQR(T/FC/2)')));
639 LINE(1,2);
640 OUTSTRING(1,('T-SCALE: 1=1 WAVE PERIOD'))); LINE(1,2);
641 OUTSTRING(1,('T'))); BLANK(1,9);
642 OUTSTRING(1,('Y=0.0'))); BLANK(1,6);
643 FOR A:=1 STEP 1 UNTIL 11 DO
644 BEGIN I:=OUTPUT(A,1/);
645 J:=OUTPUT(A,2/);
646 Y:=1/2*(J-2*M)*YMAX;
647 FIX(1,1,5,Y);
648 END HEADLINE: LINE(1,2);
649 NEVEN:=PTRUE;
650 COMMENT, COMPUTATIONS OF P IN INNERGRID;
651 IF PTRUE THEN
652 BEGIN
653 T:=T+DELTY;
654 IF T=1.250 THEN PRINTN:=4;
655 IF T=1.750 THEN PRINTN:=8;
656 IF T=1.875 THEN PRINTN:=16;
657 N:=N+1;
658 NEVEN:=NEVEN;
659 IF N>NPER THEN
660 BEGIN
661 NT:=NT+1; LAST:=END-NT<2;
662 END;
663 END;
664 DELTY:=Y:=DELTY;
665 DELTY:=DELTY;
666 PNIEW:=P(1,1/);
667 IF PTRUE THEN
668 BEGIN
669 PNUL1:=SINUS*COSDEL+COSIN*SINDEL;
670 COSIN:=COSIN+COSDEL-SINUS*SINDEL;
671 SINUS:=PNUL1;
672 PNUL2:=(PNUL1-SALT1+DELH);
673 PNUL:=PNUL2;
674 COMMENT, PNUL1=SIN(2*PI*T);
675 PNUL:=PNUL*ABS(PNUL);
676 PNIEW:=PNIEW*ABS(PNIEW);
677 END; ELSE
678 BEGIN
679 COMMENT, COMPUTATIONS OF C IN INNERGRID;
680 WY:=.5*WDELTY;
681 CNEW:=C(1,1/);
682 EPSNEW:=.25*DELTY*SQR(1-.5*DELTY/YMAX)*ABS(PNUL2+PNIEW);
683 CNUL:=CNUL;
684 CNUL:=CNUL+2*DELTY*(EPSNEW+WY)*(CNEW-CNUL);
685 ST1:=ST1+(CNUL*WDELTY);

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SG1 2990
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693      *END*
694      *FOR I:=1 STEP 1 UNTIL *IF NEVEN THEN 3 ELSE 4 DO*
695      GRID(1):
696      *COMMENT*
697      *END COMPUTATIONS INNER GRID. IF N DIVISIBLE BY 2*(J-1) THEN
698      *THE FOLLOWING CALCULATIONS UP TO J-TH GRID*
699      NN:=N:
700      EVEN:=NEVEN:
701      J:=1: *FOR J:=J+1 WHILE EVEN & J<=M DO*
702      *BEGIN NN:=NN/2:
703      EVEN:=(NN/2-ENTER(NN/2))<1:
704      DELTY:=DELTY/2:
705      DELTY:=2*DELTY:
706      PNU:=P(1,J):
707      PNIEW:=P(1/2,J):
708      *IF PTRUE THEN*
709      *BEGIN*
710      PNU:=PNU*ABS(PNU):
711      PNIEW:=PNIEW*ABS(PNIEW):
712      *END* ELSE*
713      *BEGIN*
714      WY:=2*WY:
715      EPSOLD:=.25*DELTY*SQR(1-.5*DELTY/YMAX)*ABS(PNU*PNU):
716      CNEW:=C(1,J):
717      EPSNEW:=.75*DELTY*SQR(1-.5*DELTY/YMAX)*ABS(PNU*PNIEW):
718      CNEW:=C(1/2,J):
719      *END*
720      *FOR I:=2 STEP 1 UNTIL *IF EVEN OR J=M THEN 3 ELSE 4 DO*
721      GRID(J):
722      *COMMENT*
723      *END COMPUTATIONS IN SEPARATE GRIDS. NOW INTERACTION BETWEEN*
724      *THE GRIDS. FIRST POINT LARGE GRID FROM SECOND POINT*
725      *SMALLER GRID. FOURTH POINT SMALLER GRID FROM SECOND*
726      *POINT LARGE GRID. FIFTH POINT SMALLER GRID INTERPOLATED*
727      *BETWEEN SECOND AND THIRD POINT LARGE GRID*
728      *IF PTRUE THEN*
729      *BEGIN*
730      P(1,J):=P(1/2,J-1):
731      P(4,J-1):=P(1/2,J):
732      P(5,J-1):=(-P(1/3,J-1)+4.125*P(1/2,J)+3.25*P(1/3,J)-
733      -0.375*P(1/4,J))/6:
734      *END* ELSE*
735      *BEGIN*
736      C(1,J):=C(1/2,J-1):
737      C(4,J-1):=C(1/2,J):
738      C(5,J-1):=(-C(1/3,J-1)+4.125*C(1/2,J)+3.25*C(1/3,J)-
739      -0.375*C(1/4,J))/6:
740      *END*
741      *IF LAST *AND J=M AND PTRUE THEN TIM:=TIM+1:
742      *IF TIM=TIMMAX THEN*
743      *BEGIN *COMMENT* STORAGE OF P AND C:
744      *IF PTRUE THEN*
745      *BEGIN*
746      TIME:=TIME+1:
747      STORE(P,UT):

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SG1 3990
SG1 4000
SG1 4010
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SG1 4070

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742      UT(0,TIME/):=CNUL2;
743      IF N<=CMAX THEN TIM:=0;
744      ELSE
745          BEGIN
746              TIM:=0;
747              CONC(0,TIME/):=CNUL;
748              STORE(C,CNC);
749              CONC(/MM+1,TIME/):=C(/4,M/);
750              ST(0,TIME/):=ST1;
751          END;
752      END;
753      END STORAGE;
754      END COMPUTATIONS P AND C;
755      IF N>=START+1 THEN PTRUE:=PTRUE;
756      IF PTRUE THEN GOTO LATER;
757      IF N=PRINT THEN
758          BEGIN PRINT:=PRINT+PRINTN;
759          IF N=CMAX THEN
760              BEGIN IARRAY(C,C);
761                  IREAL(0,CNUL);
762                  CONC(0,TIME/):=CNUL;
763                  STORE(C,CNC);
764                  CONC(/MM+1,TIME/):=C(/4,M/);
765              END;
766          END;
767          AFIX(1,1,5,T);
768          OUTSTRING(1,(' P '));
769          FIX(1,1,5,PNUL2);
770          PLINE(P);
771          LINE(1,1);
772          IF N=CMAX THEN
773              BEGIN BLANK(1,10);
774                  OUTSTRING(1,(' C '));
775                  FIX(1,1,5,CNUL);
776                  PLINE(C);
777                  LINE(1,2);
778              END;
779          END;
780          PRINT P AND C;
781          IF N=CMAX THEN
782              BEGIN IARRAY(25,P);
783                  OUTARRAY(25,HALF);
784                  OUTREAL(25,SINUS);
785                  OUTREAL(25,COSIN);
786                  OUTREAL(25,T);
787                  OUTINTEGER(25,PRINT);
788                  OUTARRAY(25,UT);
789                  OUTARRAY(25,C);
790                  OUTINTEGER(25,TIME);
791                  OUTINTEGER(25,TIX);
792                  OUTREAL(25,CNUL);
793                  OUTRODLEAV(25,LAST);
794                  OUTRODLEAV(25,TRU);
795          END;
796          IF TIME=32 THEN GOTO OUT;
797          IF THRU THEN GOTO LATER;

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SGL 4080

SGL 409

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807      IF N=NHAF THEN
808          FOR I:=1 STEP 1 UNTIL 5 DO
809              FOR J:=1 STEP 1 UNTIL M DO
810                  HALF(I,J):=P(I,J)
811              IF N=NHAF THEN
812                  FOR I:=1 STEP 1 UNTIL 5 DO
813                      FOR J:=1 STEP 1 UNTIL M DO
814                          P(I,J):=P(I,J)-HALF(I,J)/2
815                  COMMENT CORRECTION P
816              THRU:=THRU+2
817          CONTINUE
818      OUT:FOR IER(P)
819          FOR I:=0 STEP 1 UNTIL MM DO
820              FOR TIME:=1 STEP 1 UNTIL 32 DO
821                  BEGIN UP(I,TIME):=UT(I,TIME)
822                      UP(I,TIME):=UT(I,TIME)
823              END
824          FOR TIME:=1 STEP 1 UNTIL 32 DO
825              FOR COMMENT INTEGRATION OF P TO U: REAL U
826                  BEGIN
827                      Y:=.75*YMAX
828                      PNU:=UT(MM,TIME)*1.25/(Y*SQR(1-Y/YMAX))
829                      DELTY:=YMAX-Y
830                      COMMENT PNU EQUALS P/2/KAPPA/Y*SQR(1-Y/YMAX), AS KAPPA=0.4
831                      U:=UT(MM,TIME)/PNU*DELTY
832                      FOR J:=M-1 STEP -1 UNTIL 1 DO
833                          BEGIN DELTY:=DELTY/2
834                              FOR I:=2 STEP -1 UNTIL 0 DO
835                                  BEGIN
836                                      PNIEM:=UT(I/3*J+1,TIME)*1.25/(Y*SQR(1-Y/YMAX))
837                                      U:=UT(I/3*J+1,TIME):=U+(PNU*PNIEM)*DELTY
838                                      PNU:=PNIEM
839                                      IF TIME=32 THEN YV(I/3*J+1):=Y
840                                  END
841                              END
842                          END
843                      END
844                      FOR I:=2 STEP -1 DO
845                          BEGIN
846                              PNIEM:=UT(I,TIME)*1.25/(Y*SQR(1-Y/YMAX))
847                              U:=UT(I,TIME):=U+(PNU*PNIEM)*DELTY
848                              PNU:=PNIEM
849                              IF TIME=32 THEN YV(I):=Y
850                          END
851                      END
852                      FOR K:=1 STEP 1 UNTIL 5 DO
853                          BEGIN AA(K):=B(7+K,0)*UP(0,TIME)
854                              +B(7+K,1)*UP(3+M-5,TIME)
855                              +B(7+K,2)*UP(3+M-2,TIME)
856                              +B(7+K,3)*UP(3+M,TIME)
857                      END
858                      COMMENT END CALCULATIONS OF COEF AA(I/7) FOR OUTER GRID
859                      FOR J:=M-1 STEP -1 UNTIL 1 DO
860                          BEGIN
861                              DERIV:=0.5*AA(I/7)
862                              FOR K:=2 STEP 1 UNTIL
863                                  IF J=M-1 THEN 5 ELSE 7 DO
864                                      BEGIN
865                                          DERIV:=DERIV+K*AA(K)*YK
866                                          END
867                                  END
868                          END
869                      CALCULATION DP/DY ON UPSIDE INNER GRIDS

```

SALL12N00
SALL12O00
SALL12P03
SALL12Q03
SALL12R00
SALL12S00
SALL12T00
SALL12U00
SALL12V00
SALL12W00
SALL12X00

SALL13A01
SALL13A02

SALL13A07
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SALL13A21
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SALL13A23
SALL13A24


```

918 TOTAL('):
919 LINE(1,2):
920 T:=ENDT-1:
921 *FOR TIME:=1,STEP,1,UNTIL,32,DO*
922 BEGIN T:=T+.03125:
923 AFIX(1,2,3,T);BLANK(1,8);
924 FIX(1,2,5,CINT((TIME/)):);BLANK(1,8);
925 FIX(1,2,5,ST(TIME/));BLANK(1,9);
926 FIX(1,2,5,COT((TIME/));LINE(1,1));
927 END:
928 PAGE(1) :BLANK(1,40);
929 OUTSTRING(1,('VELOCITIES IN A TIDAL FLOW')));
930 LINE(1,1);BLANK(1,40);
931 OUTSTRING(1,('=====')));
932 LINE(1,2);BLANK(1,5);
933 OUTSTRING(1,('VALUES OF (USUR-U)/U(MEAN)/SQRT(FC/2)')));
934 LINE(1,3):
935 *FOR J:=1,STEP,1,UNTIL,MM+1,DO*
936 BEGIN OUTSTRING(1,(' T Y=')));
937 AFIX(1,0,6,YI(0/));
938 *FOR I:=3-10,STEP,1,UNTIL,IF,JKMM,THEN J,ELSE,MM,DO*
939 AFIX(1,0,5,YI(I/));LINE(1,2);
940 T:=ENDT-1:
941 *FOR TIME:=1,STEP,1,UNTIL,32,DO*
942 BEGIN T:=T+.03125:
943 AFIX(1,2,3,T);
944 FIX(1,3,3,UT(0,TIME/));
945 *FOR I:=3-10,STEP,1,UNTIL,IF,JKMM,THEN J,ELSE,MM,DO*
946 FIX(1,3,3,UT(I,TIME/));
947 LINE(1,1);
948 END:
949 *END PRINTOUT OF U:
950 *FOR I:=0,STEP,1,UNTIL,MM+DO*
951 *FOR TIME:=1,STEP,1,UNTIL,32,DO*
952 UP(1,TIME/):=UT(I,TIME/);
953 *COMMENT SEMI-GRAPHICAL PLOT OF THE POINTS U:
954 PAGE(1):OUTSTRING(1,('VELOCITY (USUR-U)/U(MEAN)/SQRT(FC/2) AS FUNCTION OF
955 TIME FOR VARIOUS LEVELS')));
956 DRAW(MM-8,MM-7,MM-5,MM-3,MM-2,MM-1,MM);
957 PAGE(1):OUTSTRING(1,('VELOCITY (USUR-U)/U(MEAN)/SQRT(FC/2) AS FUNCTION OF
958 TIME FOR VARIOUS LEVELS')));
959 DRAW(1,2,3,4,5,6,7);
960 PAGE(1);
961 OUTSTRING(1,('VELOCITY DISTRIBUTION (U)/U(MEAN)/SQRT(FC/2)')));
962 *FOR I:=0,STEP,1,UNTIL,MM+DO*
963 BEGIN K:=0:
964 *FOR TIME:=4,8,12,16,20,24,28,32,DO*
965 BEGIN K:=K+1:
966 XUT(1,K):=UT(0,TIME/)-UT(1,TIME/);
967 END:
968 *END:
969 *END LINE(1,1);
970 OUTSTRING(1,('CURVE =')));BLANK(1,3);
971 *FOR K:=1,STEP,1,UNTIL,8,DO*
972 BEGIN TYPE(1,K);
973 BLANK(1,8);

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TA109CC0
 TA109DD0
 TA109ED0
 TA109FC0
 TA109G00
 TA109H00
 TA109I00
 TA109J00
 TA109K00
 TA109L00
 TA109M00
 TA109N00
 TA109O00
 TA109P00
 TA109Q00


```
1054 UNO:=UNIEW;
1057
1058 *END;
1059 UMEAN(/O,TIME/):=UINT/(YMAX-R*CELY);
1060 *END; *COMMENT INTEGRATION TO U(MEAN);
1061 PAGE(1) :BLANK(1,40);
1062 OUTSTRING(1,('MEAN-VELOCITIES IN A TIDAL FLOW')));
1063 LINE(1,1):BLANK(1,40);
1064 OUTSTRING(1,('=====')));
1065 LINE(1,2):BLANK(1,5);
1066 OUTSTRING(1,('VALUES OF (USUR)-U(MEAN))/U(MEAN)/SQRT((C/2)')));
1067 LINE(1,3);
1068 *FOR J:=1 STEP 1 UNTIL MM+10*DO
1069   *BEGIN OUTSTRING(1,(' T Y=')));
1070   AFIX(1,6,YV(/O));
1071   *FOR I:=J-10 STEP 1 UNTIL *IF J<MM THEN J ELSE MM*DO
1072     AFIX(1,1,5,YV(/I)):LINE(1,2);
1073     T:=ENDT-1;
1074     *FOR TIME:=1 STEP 1 UNTIL 32*DO
1075       *BEGIN T:=T+.03125;
1076       AFIX(1,2,3,T);
1077       FIX(1,3,UMEAN(/O,TIME/));
1078       *FOR I:=J-10 STEP 1 UNTIL *IF J<MM THEN J ELSE MM*DO
1079         FIX(1,3,UMEAN(/I,TIME/));
1080         LINE(1,1);
1081       *END;
1082       PAGE(1);
1083       *END; *COMMENT PRINTOUT OF U(MEAN);
1084       BLANK(1,40);
1085       OUTSTRING(1,('FC=2*KAPPA**2/(LN(33*H/ER))**2 FOR A STATIONARY'))
1086     );
1087     LINE(1,1):BLANK(1,40);
1088     OUTSTRING(1,('FLOW AS FUNCTION OF R/H AND FC AS FUNCTION OF R/H
1089     ));
1090     LINE(1,1):BLANK(1,40);
1091     OUTSTRING(1,('=====')));
1092     LINE(1,2);
1093     *FOR J:=1 STEP 12 UNTIL MM+11*DO
1094       *BEGIN OUTSTRING(1,(' T R/H=')));
1095       *FOR I:=J-11 STEP 1 UNTIL *IF J<MM THEN J ELSE MM*DO
1096         *BEGIN RH:=33*YV(/I)/YMAX;
1097         AFIX(1,3,3,RH);
1098         *END; LINE(1,2):BLANK(1,3);
1099         *FOR I:=J-11 STEP 1 UNTIL *IF J<MM THEN J ELSE MM*DO
1100           *BEGIN CH:=.32/(LN(YMAX/(2.718*YV(/I))))**2;
1101           AFIX(1,3,3,CH);
1102           *END; LINE(1,2);
1103           T:=ENDT-1;
1104           *FOR TIME:=1 STEP 1 UNTIL 32*DO
1105             *BEGIN T:=T+.03125;
1106             AFIX(1,1,3,T);
1107             *FOR I:=J-11 STEP 1 UNTIL *IF J<MM THEN J ELSE MM*DO
1108               FOR I:=J-11 STEP 1 UNTIL *IF J<MM THEN J ELSE MM*DO
1109                 FOR I:=J-11 STEP 1 UNTIL *IF J<MM THEN J ELSE MM*DO
1110                   FOR I:=J-11 STEP 1 UNTIL *IF J<MM THEN J ELSE MM*DO
1111                     FOR I:=J-11 STEP 1 UNTIL *IF J<MM THEN J ELSE MM*DO
1112                       FOR I:=J-11 STEP 1 UNTIL *IF J<MM THEN J ELSE MM*DO
1113                         FOR I:=J-11 STEP 1 UNTIL *IF J<MM THEN J ELSE MM*DO
1114                           FOR I:=J-11 STEP 1 UNTIL *IF J<MM THEN J ELSE MM*DO
1115                             FOR I:=J-11 STEP 1 UNTIL *IF J<MM THEN J ELSE MM*DO
1116                               FOR I:=J-11 STEP 1 UNTIL *IF J<MM THEN J ELSE MM*DO
1117                                 FOR I:=J-11 STEP 1 UNTIL *IF J<MM THEN J ELSE MM*DO
1118                                   FOR I:=J-11 STEP 1 UNTIL *IF J<MM THEN J ELSE MM*DO
1119                                     FOR I:=J-11 STEP 1 UNTIL *IF J<MM THEN J ELSE MM*DO
1120                                       FOR I:=J-11 STEP 1 UNTIL *IF J<MM THEN J ELSE MM*DO
1121                                         FOR I:=J-11 STEP 1 UNTIL *IF J<MM THEN J ELSE MM*DO
1122                                           FOR I:=J-11 STEP 1 UNTIL *IF J<MM THEN J ELSE MM*DO
1123                                             FOR I:=J-11 STEP 1 UNTIL *IF J<MM THEN J ELSE MM*DO
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TALIOX50

TALIOX5

TALIOX58

TALIOX62

TALIOX68

TALIOX70

TALIOX7

TALIOX74

TALIOX76

TALIOX78

TALIOX79

TALIOX80

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1124      DO
1125      *BEGIN*FC(/I,TIME/):=(2*UP(/I,TIME/)**2)/
1126      ( (U*E*AN(/I,TIME/))-UT(/I,TIME/))**2);
1127      AFI(1,3,FC(/I,TIME/));
1128      *END* ; LINE(1,1);
1129      *END*PAGE(1);
1130      *END*COMPUTATION OF FC;
1131      BLANK(1,40);
1132      OUTSTRING(1,('CHEZY=13*LOG12*H/K FOR A STATIONARY FLOW AS FUNC-'))
1133      );
1134      );
1135      LINE(1,1);BLANK(1,40);
1136      OUTSTRING(1,('TION OF R/H AND CHEZY-COEFFICIENT=SQRT(2G/FC) AS'))
1137      );
1138      );
1139      LINE(1,1);BLANK(1,40);
1140      OUTSTRING(1,('FUNCTION OF R/H AND T FOR YMAX=')));
1141      AFI(1,1,3,YMAX);
1142      LINE(1,1);BLANK(1,40);
1143      OUTSTRING(1,('====='))
1144      );
1145      LINE(1,3);
1146      *FOR*J:=1,STEP:1,UNTIL*MM*+1,DO
1147      *BEGIN*OUTSTRING(1,(' T R/H=')));
1148      *FOR*I:=J-1,STEP:1,UNTIL*J*IF*J<MM*THEN*J*ELSE*MM*DO
1149      *BEGIN*RM:=33*YV(/I)/YMAX;
1150      AFI(1,3,RH);
1151      *END* ; LINE(1,2);BLANK(1,8);
1152      *FOR*I:=J-1,STEP:1,UNTIL*J*IF*J<MM*THEN*J*ELSE*MM*DO
1153      *BEGIN*CH:=SQRT(10/.16)*(LN(YMAX/12.718*YV(/I)))));
1154      AFI(1,3,CH);
1155      *END* ; LINE(1,2);
1156      T:=ENDT-1;
1157      *FOR*TIME:=1,STEP:1,UNTIL*32*DO
1158      *BEGIN*T:=T+.03125;
1159      AFI(1,1,3,T);
1160      *FOR*I:=J-1,STEP:1,UNTIL*J*IF*J<MM*THEN*J*ELSE*MM
1161      *DO
1162      *BEGIN*CH:=SQRT(2G/FC(/I,TIME/));
1163      AFI(1,1,3,CH);
1164      *END* ; LINE(1,1);
1165      *END*PAGE(1);
1166      );
1167      *END* ;
1168      *FOR*TIME:=1,STEP:1,UNTIL*32*DO
1169      *BEGIN*USUR:=UT(/O,TIME/);
1170      *FOR*T:=1,STEP:1,UNTIL*MM*DO
1171      UT(/I,TIME/):=(USUR-UT(/I,TIME/))*CONC(/I,TIME/);
1172      );
1173      );
1174      );
1175      );
1176      );
1177      );
1178      );
1179      );
1180      );
1181      PAGE(1) ;BLANK(1,40);
1182      OUTSTRING(1,(' '));
1183      LINE(1,1);BLANK(1,40);
1184      OUTSTRING(1,(' '));
1185      );
1186      );
1187      LINE(1,2);BLANK(1,5);
1188      OUTSTRING(1,('VALUES OF (U*E*U*E*AN )/SQRT(FC/2))')));
1189      LINE(1,3);
1190      *FOR*J:=1,STEP:1,UNTIL*MM*+1,DO
1191      *BEGIN*OUTSTRING(1,(' T Y=')));
1192      );

```

TAL10X82

TAL10X83
TAL10X90SAL13A30
SAL13A31
SAL13A32
SAL13A33
SAL13A34
SAL13A35
SAL13A36
SAL13A37
SAL13A37
SAL13A37

```
1194      FOR I:=J-1 STEP 1 UNTIL 1 IF JKMM THEN J ELSE MM DO
1195      AFIX(1,1,D,YV(I/I)); LINE(1,2);
1196      T:=ENDT-1;
1197      FOR TIME:=1 STEP 1 UNTIL 32 DO
1198      BEGIN I:=T+.03125;
1199      AFIX(1,2,3,T);
1200      FOR I:=J-1 STEP 1 UNTIL 1 IF JKMM THEN J ELSE MM DO
1201      FIX(1,3,3,UT(I,TIME));
1202      LINE(1,1);
1203      END;
1204      PAGE(1);
1205      END PRINTOUT OF U*C ;
1206      END;
1207      FINISH; END;
1208
1209
```

SAL13A39
SAL13A40
SAL13A41
SAL13A42
SAL13A43
SAL13A44
SAL13A45
SAL13A46
SAL13A47
SAL13A48
SAL13A49
SAL13A50
SAL13B00

NO ERRORS FOUND

INPUT:
=====

M	=	3						
ENDY	=	-4						
PRINTN	=	255						
ENDT	=	2						
W	=	.30900						
E	=	64						
N	=	0						
DELRO	=	0						
ROMEAN	=	1014						
MAY	=	15000						
R	=	.00100						
DELH	=	.00000						
CSTART	=	1.25000						
OUTPUT	=	(1,1) (2,1) (3,1) (4,1) (5,1) (3,2) (4,2) (5,2) (3,3) (4,3) (1,3)						

ELEMENTEN VAN MATRIX B

-2.61666667	+2.66333333	-1.39675925	+41319444	-069675926	+006250000	-000231481
+7.20000000	-11.64000000	+7.54000000	-2.51666667	+458333333	-043333333	+00166667
-11.25000000	+23.81250000	-16.06250000	+6.68229167	-1.30729167	+130208333	-005208333
+13.33333333	-30.44444444	+25.37037037	-10.16666667	+2.12037037	-222222222	+009259259
-11.25000000	+26.62500000	-23.31250000	+9.88541667	-2.17708333	+239583333	-01041667
+7.20000000	-17.40000000	+15.70000000	-6.91666667	+1.59166667	-183333333	+008333333
-2.61666667	+6.38305556	-5.83861111	+2.61909722	-616319444	+072847222	-003402778
+1.00000000	-2.45000000	+2.25555556	-1.02083333	+243055556	-02916667	+001388889

-2.08333333	+1.45833333	-41666667	+04166667	-00000000
+4.00000000	-4.33333333	+1.50000000	-16666667	+00000000
-3.00000000	+4.75000000	-2.00000000	+25000000	+00000000
+1.33333333	-2.33333333	+1.16666667	-16666667	+00000000
-25000000	+45833333	-25000000	+04166667	+00000000
+00000000	+00000000	+00000000	+00000000	+00000000
+00000000	+00000000	+00000000	+00000000	+00000000
+00000000	+00000000	+00000000	+00000000	+00000000

SHEAR STRESS VELOCITY AND SAND CONCENTRATIONS INITIAL WAVES
 =====

VALUES OF SQR(2*TAU/FC/RHO)/U-MEAN AND OF CONC

Y-SCALE: 1=KAPPA*U*MEAN*T*SQR(T/FC/2)

T-SCALE: 1=1 WAVE PERIOD

T	Y = 0.0	+.00391	+.00781	+.01172	+.01562	+.01953	+.02344	+.03125	+.03906	+.04687	+.06250	+.01562
0.6250 P	+.38268	+.23841	+.21188	+.14477	+.08481	+.03950	+.01008	+.00289	+.00030	+.00000	+.00000	+.08481
1.2500 P	+.70711	+.64369	+.58868	+.53791	+.48971	+.44313	+.39716	+.30787	+.21187	+.12258	+.00000	+.48971
1.8750 P	+.92338	+.87833	+.83702	+.79662	+.75682	+.71710	+.67694	+.59342	+.51419	+.40438	+.00000	+.75682
2.5000 P	+.1.00000	+.96646	+.93212	+.89690	+.86038	+.82276	+.78369	+.69804	+.61510	+.49073	+.00000	+.86038
3.1250 P	+.92388	+.90436	+.88015	+.85289	+.82316	+.79129	+.75736	+.68009	+.60387	+.48469	+.00000	+.82316
3.7500 P	+.70711	+.70928	+.70109	+.68723	+.66936	+.64837	+.62471	+.56730	+.50869	+.44131	+.00000	+.66936
4.3750 P	+.33268	+.42340	+.43970	+.44514	+.44388	+.43803	+.42853	+.39857	+.36449	+.29888	+.00000	+.44388
5.0000 P	+.00000	+.15679	+.19893	+.22198	+.23519	+.24233	+.24490	+.23873	+.22619	+.18994	+.00000	+.23519
5.6250 P	+.39268	+.25805	+.12481	+.06649	+.10647	+.14299	+.13729	+.14299	+.14095	+.12099	+.00000	+.10647
6.2500 P	+.70711	+.63742	+.57517	+.51611	+.45839	+.40098	+.34201	+.21958	+.07514	+.03474	+.00000	+.45839
6.8750 P	+.92388	+.87752	+.83441	+.79275	+.75171	+.71085	+.66957	+.58425	+.50329	+.39362	+.00000	+.75171
7.5000 P	+.1.00000	+.96643	+.93205	+.89670	+.86026	+.82261	+.78352	+.69783	+.61486	+.49050	+.00000	+.86026
8.1250 P	+.92388	+.90436	+.88015	+.85288	+.82316	+.79129	+.75735	+.68009	+.60387	+.48468	+.00000	+.82316
8.7500 P	+.70711	+.70928	+.70109	+.68723	+.66936	+.64837	+.62471	+.56730	+.50869	+.44131	+.00000	+.66936
9.3750 P	+.33268	+.42340	+.43970	+.44514	+.44388	+.43803	+.42853	+.39857	+.36449	+.29888	+.00000	+.44388
10.0000 P	+.00000	+.15679	+.19893	+.22198	+.23519	+.24233	+.24490	+.23873	+.22619	+.18994	+.00000	+.23519
10.6250 P	+.39268	+.25805	+.12481	+.06649	+.10647	+.14299	+.13729	+.14299	+.14095	+.12099	+.00000	+.10647
11.2500 P	+.70711	+.63742	+.57517	+.51611	+.45839	+.40098	+.34201	+.21958	+.07514	+.03474	+.00000	+.45839
11.8750 P	+.92388	+.87752	+.83441	+.79275	+.75171	+.71085	+.66957	+.58425	+.50329	+.39362	+.00000	+.75171
12.5000 P	+.1.00000	+.96643	+.93205	+.89670	+.86026	+.82261	+.78352	+.69783	+.61486	+.49050	+.00000	+.86026
1.25098 P	+.99998	+.96659	+.93234	+.89709	+.86071	+.82311	+.78407	+.69842	+.61547	+.49105	+.00000	+.86071
1.25195 P	+.99992	+.96672	+.93260	+.89744	+.86113	+.82359	+.78459	+.69899	+.61605	+.49157	+.00000	+.86113
1.25293 P	+.99983	+.96681	+.93281	+.89775	+.86152	+.82403	+.78507	+.69952	+.61661	+.49206	+.00000	+.86152
1.25391 P	+.99970	+.96687	+.93300	+.89803	+.86187	+.82444	+.78553	+.70002	+.61714	+.49254	+.00000	+.86187
1.25488 P	+.99953	+.96689	+.93314	+.89827	+.86219	+.82482	+.78595	+.70049	+.61764	+.49299	+.00000	+.86219
1.25586 P	+.99932	+.96687	+.93326	+.89848	+.86247	+.82516	+.78634	+.70094	+.61811	+.49343	+.00000	+.86247
1.25684 P	+.99908	+.96681	+.93333	+.89865	+.86272	+.82547	+.78670	+.70135	+.61856	+.49384	+.00000	+.86272
1.25781 P	+.99880	+.96672	+.93337	+.89879	+.86294	+.82575	+.78703	+.70174	+.61898	+.49422	+.00000	+.86294
1.25879 P	+.99848	+.96659	+.93337	+.89890	+.86312	+.82599	+.78732	+.70210	+.61938	+.49459	+.00000	+.86312
1.25976 P	+.99816	+.96646	+.93337	+.89901	+.86324	+.82611	+.78744	+.70222	+.61950	+.49471	+.00000	+.86324
1.26073 P	+.99784	+.96633	+.93337	+.89912	+.86336	+.82623	+.78756	+.70234	+.61962	+.49483	+.00000	+.86336
1.26170 P	+.99752	+.96620	+.93337	+.89923	+.86348	+.82635	+.78768	+.70246	+.61974	+.49495	+.00000	+.86348
1.26267 P	+.99720	+.96607	+.93337	+.89934	+.86359	+.82646	+.78779	+.70257	+.61986	+.49507	+.00000	+.86359
1.26364 P	+.99688	+.96594	+.93337	+.89945	+.86370	+.82657	+.78790	+.70268	+.61997	+.49518	+.00000	+.86370
1.26461 P	+.99656	+.96581	+.93337	+.89956	+.86381	+.82668	+.78801	+.70279	+.62008	+.49529	+.00000	+.86381
1.26558 P	+.99624	+.96568	+.93337	+.89967	+.86392	+.82679	+.78812	+.70290	+.62019	+.49540	+.00000	+.86392
1.26655 P	+.99592	+.96555	+.93337	+.89978	+.86403	+.82690	+.78823	+.70301	+.62030	+.49551	+.00000	+.86403
1.26752 P	+.99560	+.96542	+.93337	+.89989	+.86414	+.82701	+.78834	+.70312	+.62041	+.49562	+.00000	+.86414
1.26849 P	+.99528	+.96529	+.93337	+.89999	+.86425	+.82712	+.78845	+.70323	+.62052	+.49573	+.00000	+.86425
1.26946 P	+.99496	+.96516	+.93337	+.90000	+.86436	+.82723	+.78856	+.70334	+.62063	+.49584	+.00000	+.86436
1.27043 P	+.99464	+.96503	+.93337	+.90000	+.86447	+.82734	+.78867	+.70345	+.62074	+.49595	+.00000	+.86447
1.27140 P	+.99432	+.96490	+.93337	+.90000	+.86458	+.82745	+.78878	+.70356	+.62085	+.49606	+.00000	+.86458
1.27237 P	+.99400	+.96477	+.93337	+.90000	+.86469	+.82756	+.78889	+.70367	+.62096	+.49617	+.00000	+.86469
1.27334 P	+.99368	+.96464	+.93337	+.90000	+.86480	+.82767	+.78900	+.70378	+.62107	+.49628	+.00000	+.86480
1.27431 P	+.99336	+.96451	+.93337	+.90000	+.86491	+.82778	+.78911	+.70389	+.62118	+.49639	+.00000	+.86491
1.27528 P	+.99304	+.96438	+.93337	+.90000	+.86502	+.82789	+.78922	+.70400	+.62129	+.49650	+.00000	+.86502
1.27625 P	+.99272	+.96425	+.93337	+.90000	+.86513	+.82800	+.78933	+.70411	+.62140	+.49661	+.00000	+.86513
1.27722 P	+.99240	+.96412	+.93337	+.90000	+.86524	+.82811	+.78944	+.70422	+.62151	+.49672	+.00000	+.86524
1.27819 P	+.99208	+.96399	+.93337	+.90000	+.86535	+.82822	+.78955	+.70433	+.62162	+.49683	+.00000	+.86535
1.27916 P	+.99176	+.96386	+.93337	+.90000	+.86546	+.82833	+.78966	+.70444	+.62173	+.49694	+.00000	+.86546
1.28013 P	+.99144	+.96373	+.93337	+.90000	+.86557	+.82844	+.78977	+.70455	+.62184	+.49705	+.00000	+.86557
1.28110 P	+.99112	+.96360	+.93337	+.90000	+.86568	+.82855	+.78988	+.70466	+.62195	+.49716	+.00000	+.86568
1.28207 P	+.99080	+.96347	+.93337	+.90000	+.86579	+.82866	+.78999	+.70477	+.62206	+.49727	+.00000	+.86579
1.28304 P	+.99048	+.96334	+.93337	+.90000	+.86590	+.82877	+.79010	+.70488	+.62217	+.49738	+.00000	+.86590
1.28401 P	+.99016	+.96321	+.93337	+.90000	+.86601	+.82888	+.79021	+.70499	+.62228	+.49749	+.00000	+.86601
1.28498 P	+.98984	+.96308	+.93337	+.90000	+.86612	+.82899	+.79032	+.70510	+.62239	+.49760	+.00000	+.86612
1.28595 P	+.98952	+.96295	+.93337	+.90000	+.86623	+.82910	+.79043	+.70521	+.62250	+.49771	+.00000	+.86623
1.28692 P	+.98920	+.96282	+.93337	+.90000	+.86634	+.82921	+.79054	+.70532	+.62261	+.49782	+.00000	+.86634
1.28789 P	+.98888	+.96269	+.93337	+.90000	+.86645	+.82932	+.79065	+.70543	+.62272	+.49793	+.00000	+.86645
1.28886 P	+.98856	+.96256	+.93337	+.90000	+.86656	+.82943	+.79076	+.70554	+.62283	+.49804	+.00000	+.86656
1.28983 P	+.98824	+.96243	+.93337	+.90000	+.86667	+.82954	+.79087	+.70565	+.62294	+.49815	+.00000	+.86667
1.29080 P	+.98792	+.96230	+.93337	+.90000	+.86678	+.82965	+.79098	+.70576	+.62305	+.49826	+.00000	+.86678
1.29177 P	+.98760	+.96217	+.93337	+.90000	+.86689	+.82976	+.79109	+.70587	+.62316	+.49837	+.00000	+.86689
1.29274 P	+.98728	+.96204	+.93337	+.90000	+.86700	+.82987	+.79120	+.70598	+.62327	+.49848	+.00000	+.86700
1.29371 P	+.98696	+.96191	+.93337	+.90000	+.86711	+.82998	+.79131	+.70609	+.62338	+.49859	+.00000	+.86711
1.29468 P	+.98664	+.96178	+.93337	+.90000	+.86722	+.83009	+.79142	+.70620	+.62349	+.49870	+.00000	+.86722
1.29565 P	+.98632	+.96165	+.93337	+.90000	+.86733	+.83020	+.79153	+.70631	+.62360	+.49881	+.00000	+.86733
1.29662 P	+.98600	+.96152	+.93337	+.90000	+.86744	+.83031	+.79164	+.70642	+.62371	+.49892	+.00000	+.86744
1.29759 P	+.98568	+.96139	+.93337	+.90000	+.86755	+.83042	+.79175	+.70653	+.62382	+.49903	+.00000	+.86755
1.29856 P	+.98536	+.96126	+.93337	+.90000	+.86766	+.83053	+.79186	+.70664	+.62393	+.49914	+.00000	+.86766
1.29953 P	+.98504	+.96113	+.93337	+.90000	+.86777	+.83064	+.79197	+.70675	+.62404	+.49925	+.00000	+.86777
1.30050 P	+.98472	+.96100	+.93337	+.90000	+.86788	+.83075	+.79208	+.70686	+.62415	+.49936	+.00000	+.86788
1.30147 P	+.98440	+.96087	+.93337	+.90000	+.86799	+.83086	+.79219	+.70697	+.62426	+.49947	+.00000	+.86799
1.30244 P	+.98408	+.96074	+.93337	+.90000	+.86810	+.83097	+.79230	+.70708	+.62437	+.49958	+.00000	+.86810
1.30341 P	+.98376	+.96061	+.93337	+.90000	+.86821	+.83108	+.79241	+.70719	+.62448	+.49969	+.00000	+.86821
1.30438 P	+.98344	+.96048	+.93337	+.90000	+.86832	+.83119	+.79252	+.70730	+.62459	+.49980	+.00000	+.86832
1.30535 P	+.98312	+.96035	+.93337	+.90000	+.86843	+.83130	+.79263	+.70741	+.62470	+.49991	+.00000	+.86843
1.30632 P	+.98280	+.96022	+.93337	+.90000	+.86854	+.83141	+.79274	+.70752	+.62481	+.50002	+.00000	+.86854
1.30729 P	+.98248	+.96009	+.93337	+.90000	+.86865	+.83152	+.79285	+.70763	+.62492	+.50013	+.00000	+.86865
1.30826 P	+.98216	+.95996	+.93337	+.9000								

1.92969	P	-.42755	-.46171	-.47436	-.47709	-.47357	-.46569	-.45433	-.42078	-.38351	-.31374	+0.0000	-.47357
	C	+0.00447	+0.00434	+0.00421	+0.00408	+0.00395	+0.00381	+0.00366	+0.00334	+0.00298	+0.00251	+0.00109	+0.00395
1.93359	P	-.40524	-.44259	-.45704	-.46111	-.45872	-.45185	-.44143	-.40967	-.37399	-.30631	+0.0000	-.45872
	C	+0.00437	+0.00424	+0.00412	+0.00399	+0.00385	+0.00371	+0.00357	+0.00325	+0.00289	+0.00242	+0.00103	+0.00385
1.93750	P	-.38268	-.42340	-.43970	-.44514	-.44368	-.43803	-.42853	-.39857	-.36449	-.29868	+0.0000	-.44368
	C	+0.00428	+0.00415	+0.00402	+0.00389	+0.00376	+0.00362	+0.00348	+0.00317	+0.00282	+0.00236	+0.00099	+0.00378
1.94141	P	-.35990	-.40419	-.42239	-.42921	-.42908	-.42424	-.41568	-.38750	-.35500	-.29146	+0.0000	-.42908
	C	+0.00419	+0.00406	+0.00393	+0.00380	+0.00367	+0.00354	+0.00340	+0.00309	+0.00274	+0.00229	+0.00094	+0.00367
1.94531	P	-.33659	-.38500	-.40514	-.41334	-.41435	-.41052	-.40288	-.37647	-.34555	-.28407	+0.0000	-.41435
	C	+0.00410	+0.00397	+0.00384	+0.00372	+0.00358	+0.00345	+0.00331	+0.00300	+0.00265	+0.00221	+0.00089	+0.00358
1.94922	P	-.31368	-.36587	-.38798	-.39758	-.39972	-.39689	-.39017	-.36551	-.33614	-.27671	+0.0000	-.39972
	C	+0.00402	+0.00388	+0.00376	+0.00363	+0.00350	+0.00337	+0.00323	+0.00292	+0.00257	+0.00213	+0.00084	+0.00350
1.95312	P	-.29028	-.34685	-.37097	-.38196	-.38522	-.38339	-.37757	-.35464	-.32661	-.26940	+0.0000	-.38522
	C	+0.00393	+0.00380	+0.00367	+0.00355	+0.00342	+0.00328	+0.00314	+0.00284	+0.00249	+0.00206	+0.00079	+0.00342
1.95703	P	-.26671	-.32798	-.35414	-.36652	-.37069	-.37003	-.36511	-.34388	-.31757	-.26216	+0.0000	-.37069
	C	+0.00385	+0.00372	+0.00359	+0.00346	+0.00333	+0.00320	+0.00306	+0.00276	+0.00241	+0.00199	+0.00075	+0.00333
1.96094	P	-.24298	-.30933	-.33756	-.35130	-.35676	-.35696	-.35281	-.33325	-.30842	-.25499	+0.0000	-.35676
	C	+0.00377	+0.00363	+0.00351	+0.00338	+0.00325	+0.00312	+0.00298	+0.00268	+0.00234	+0.00191	+0.00070	+0.00325
1.96484	P	-.21910	-.29098	-.32126	-.33635	-.34268	-.34391	-.34070	-.32277	-.29940	-.24790	+0.0000	-.34268
	C	+0.00369	+0.00355	+0.00343	+0.00330	+0.00317	+0.00304	+0.00290	+0.00260	+0.00226	+0.00184	+0.00066	+0.00317
1.96875	P	-.19509	-.27298	-.30531	-.32171	-.32927	-.33120	-.32881	-.31246	-.29051	-.24092	+0.0000	-.32927
	C	+0.00362	+0.00348	+0.00335	+0.00322	+0.00309	+0.00296	+0.00282	+0.00253	+0.00221	+0.00179	+0.00063	+0.00311
1.97266	P	-.17096	-.25545	-.28978	-.30744	-.31598	-.31877	-.31717	-.30236	-.28178	-.23404	+0.0000	-.31598
	C	+0.00354	+0.00340	+0.00327	+0.00314	+0.00302	+0.00288	+0.00275	+0.00247	+0.00213	+0.00173	+0.00058	+0.00302
1.97656	P	-.14673	-.23847	-.27472	-.29357	-.30304	-.30666	-.30581	-.29246	-.27321	-.22729	+0.0000	-.30304
	C	+0.00347	+0.00332	+0.00320	+0.00307	+0.00294	+0.00281	+0.00268	+0.00239	+0.00206	+0.00166	+0.00054	+0.00294
1.98047	P	-.12241	-.22218	-.26023	-.28017	-.29050	-.29489	-.29475	-.28281	-.26483	-.22067	+0.0000	-.29050
	C	+0.00340	+0.00325	+0.00312	+0.00300	+0.00287	+0.00274	+0.00261	+0.00232	+0.00199	+0.00160	+0.00051	+0.00287
1.98437	P	-.09802	-.20672	-.24636	-.26728	-.27840	-.28350	-.28402	-.27340	-.25665	-.21420	+0.0000	-.27840
	C	+0.00333	+0.00318	+0.00305	+0.00292	+0.00280	+0.00267	+0.00253	+0.00225	+0.00192	+0.00153	+0.00047	+0.00280
1.98828	P	-.07356	-.19224	-.23321	-.25496	-.26673	-.27252	-.27364	-.26428	-.24869	-.20768	+0.0000	-.26673
	C	+0.00326	+0.00310	+0.00298	+0.00285	+0.00273	+0.00260	+0.00246	+0.00218	+0.00186	+0.00147	+0.00043	+0.00273
1.99219	P	-.04907	-.17894	-.22086	-.24327	-.25568	-.26198	-.26365	-.25545	-.24094	-.20172	+0.0000	-.25568
	C	+0.00319	+0.00303	+0.00291	+0.00278	+0.00266	+0.00253	+0.00239	+0.00211	+0.00179	+0.00141	+0.00040	+0.00266
1.99609	P	-.02454	-.16705	-.20940	-.23325	-.24514	-.25191	-.25406	-.24692	-.23344	-.19574	+0.0000	-.24514
	C	+0.00312	+0.00296	+0.00284	+0.00271	+0.00259	+0.00246	+0.00233	+0.00204	+0.00173	+0.00135	+0.00037	+0.00259
2.00000	P	-.00000	-.15679	-.19893	-.22198	-.23519	-.24233	-.24490	-.23973	-.22619	-.18994	+0.0000	-.23519
	C	+0.00305	+0.00289	+0.00277	+0.00264	+0.00252	+0.00239	+0.00226	+0.00198	+0.00168	+0.00131	+0.00035	+0.00254

SHEAR STRESS VELOCITIES AS FUNCTION OF TIME FOR VARIOUS LEVELS
 CURVE = 1 2 3 4 5 6 7
 LEVEL YSTAR = .004 .008 .016 .023 .031 .039 .047
 +.3125*-01

+ .1322*+00

+ .2331*+00

+ .3340*+00

+ .4349*+00

+ .5358*+00

+ .6367*+00

+ .7376*+00

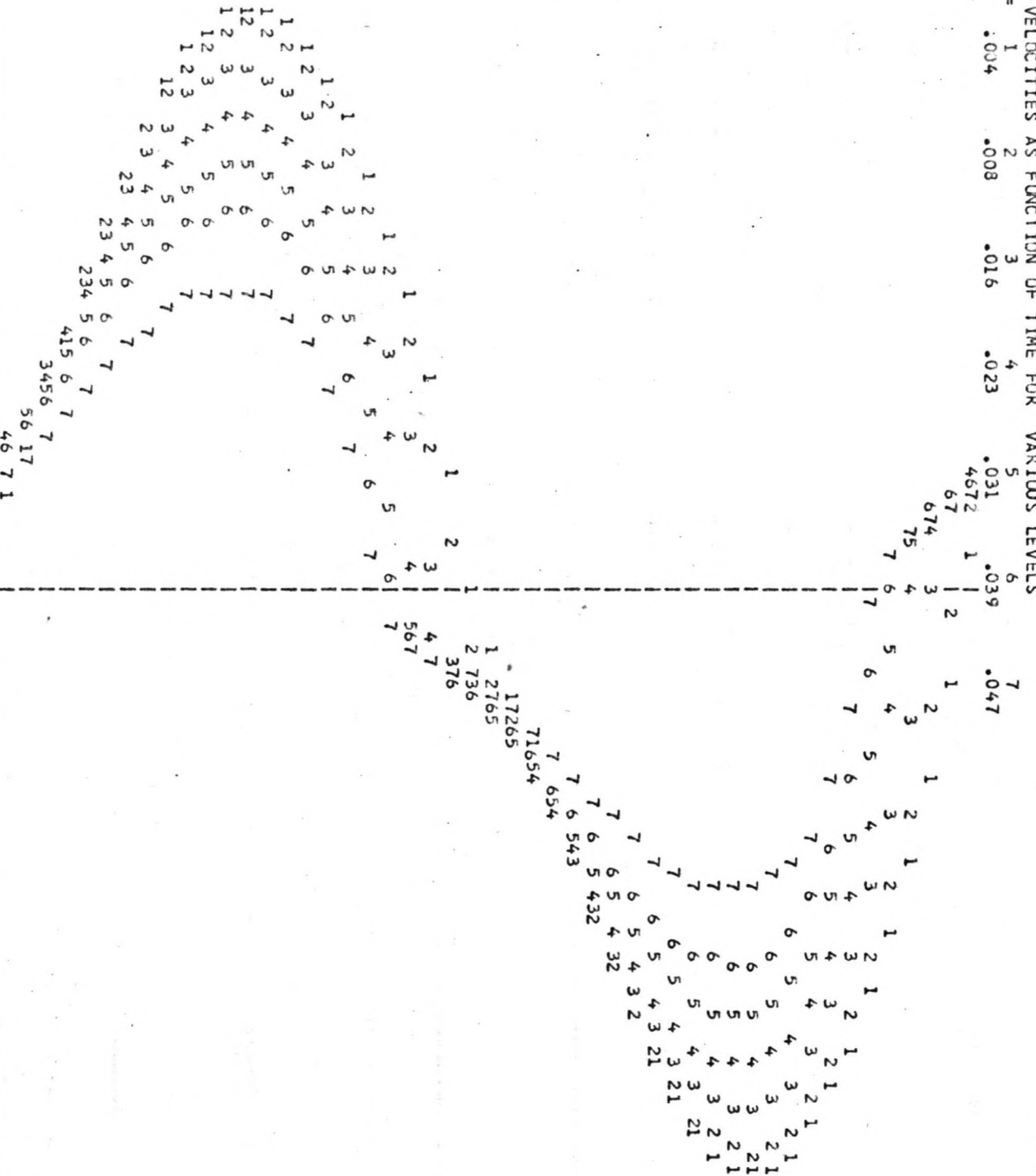
+ .8385*+00

+ .9395*+00

+ .1020*+01

- .9762*+00

1 POSITION REPRESENTS :+.19524*-01
 1 LINE REPRESENTS :+.20162*-01



+ .9762*+00

CONCENTRATION AS FUNCTION OF TIME FOR VARIOUS
CURVE = 1
LEVEL YSTAR = .004
+ .3125*-01

LEVELS
5
6
7
0.039
0.047

+ .1301*+00

+ .2290*+00

+ .3273*+00

+ .4267*+00

+ .5255*+00

+ .6244*+00

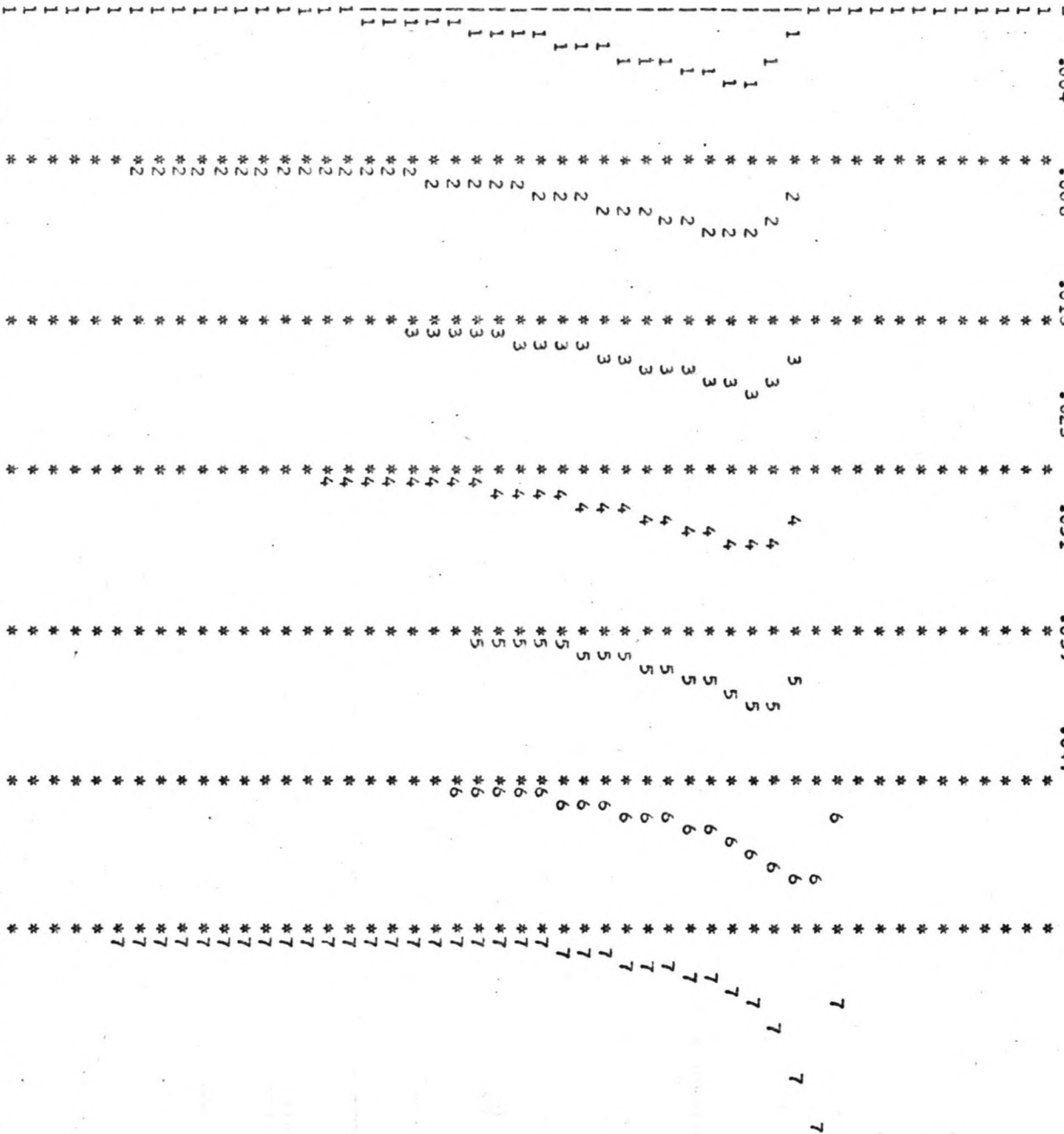
+ .7232*+00

+ .8221*+00

+ .9209*+00

+ .1020*+01

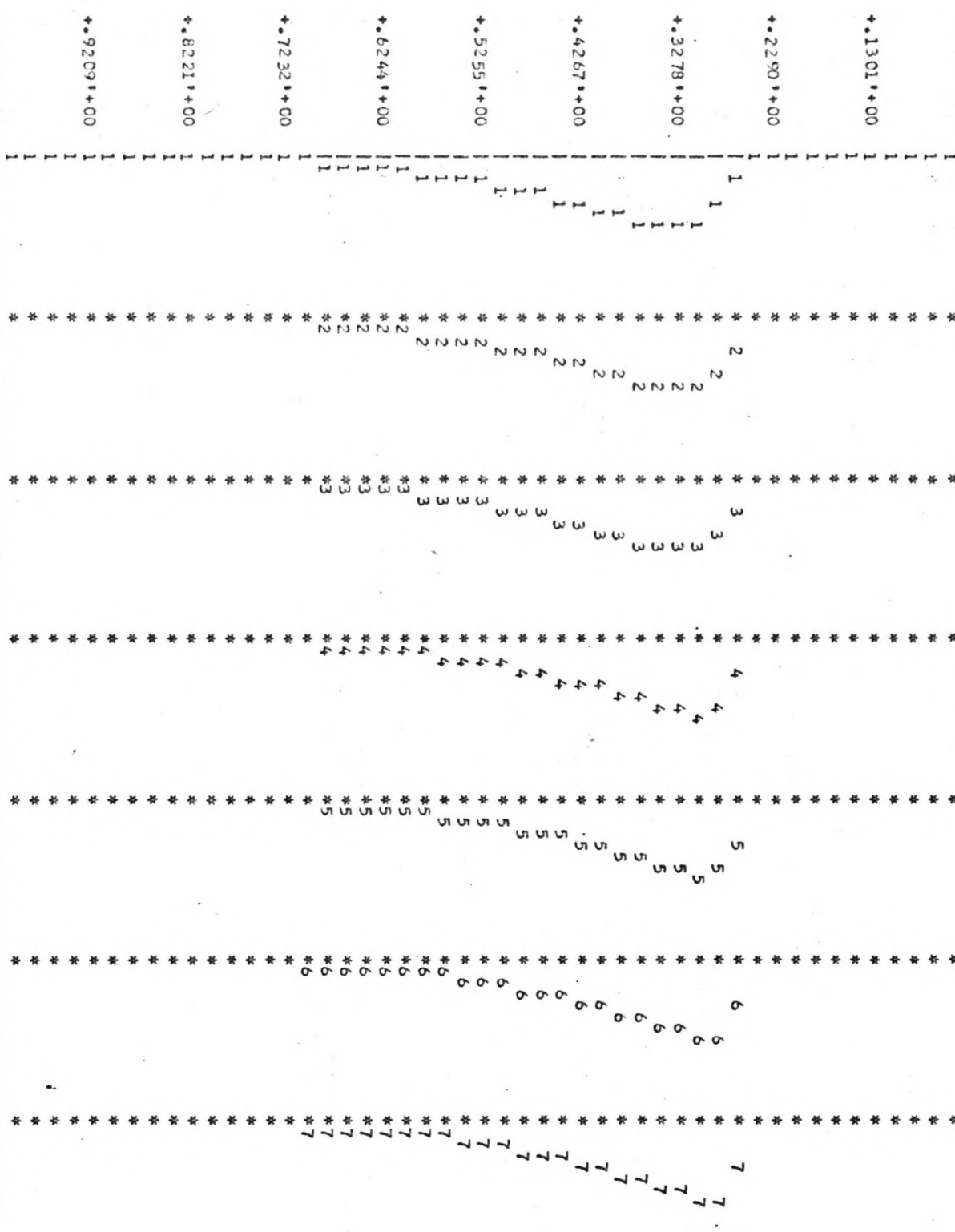
+ .0000*+00



1 POSITION REPRESENTS :+.60440*-01
1 LINE REPRESENTS :+.19770*-01

+ .5560*+01

CONCENTRATION AS FUNCTION OF TIME FOR VARIOUS LEVELS
CURVE = 1
LEVEL YSTAR = .000
+ .3125*-01



1 POSITION REPRESENTS :+.53442*-01
1 LINE REPRESENTS :+.19770*-01

T

INTEGRATED C

SETTLED TRANSPORT

TOTAL

1.031	+ .00000	+ .00000	+ .00000
1.062	+ .00000	+ .00000	+ .00000
1.094	+ .00000	+ .00000	+ .00000
1.125	+ .00000	+ .00000	+ .00000
1.156	+ .00000	+ .00000	+ .00000
1.187	+ .00000	+ .00000	+ .00000
1.219	+ .00000	+ .00000	+ .00000
1.250	+ .02344	+ .00000	+ .02344
1.281	+ .02296	+ .00066	+ .02362
1.312	+ .02033	+ .00354	+ .02387
1.344	+ .01705	+ .00692	+ .02397
1.375	+ .01404	+ .00998	+ .02402
1.406	+ .01145	+ .01261	+ .02406
1.437	+ .00926	+ .01443	+ .02409
1.469	+ .00740	+ .01670	+ .02411
1.500	+ .00582	+ .01830	+ .02412
1.531	+ .00449	+ .01964	+ .02412
1.562	+ .00337	+ .02074	+ .02412
1.594	+ .00247	+ .02152	+ .02410
1.625	+ .00182	+ .02230	+ .02412
1.656	+ .00134	+ .02278	+ .02412
1.687	+ .00101	+ .02310	+ .02411
1.719	+ .00079	+ .02332	+ .02411
1.750	+ .00064	+ .02347	+ .02411
1.781	+ .00052	+ .02359	+ .02411
1.812	+ .00043	+ .02369	+ .02411
1.844	+ .00035	+ .02377	+ .02411
1.875	+ .00028	+ .02383	+ .02412
1.906	+ .00023	+ .02388	+ .02412
1.937	+ .00019	+ .02393	+ .02412
1.969	+ .00015	+ .02397	+ .02412
2.000	+ .00012	+ .02400	+ .02412

BULAGE 131

VELOCITIES IN A TIDAL FLOW
=====

VALUES OF ((USUR)-U)/U(MEAN)/SQRT(FC/2)

T	Y = .000004	.003906	.007812	.011719	.015625	.019531	.023437	.031250	.039062	.046875
1.031	+1.317	-1.256	-1.106	-.949	-.815	-.698	-.595	-.415	-.261	-.125
1.062	+5.525	-.216	-.633	-.686	-.617	-.540	-.465	-.330	-.209	-.101
1.094	+10.664	+1.382	+.522	+.120	-.107	-.226	-.262	-.231	-.157	-.077
1.125	+15.157	+3.124	+1.916	+1.294	+.890	+.603	+.392	+.115	-.013	-.029
1.156	+18.990	+4.776	+3.292	+2.497	+1.958	+1.556	+1.241	+.765	+.432	+.196
1.187	+21.735	+5.901	+4.210	+3.286	+2.649	+2.163	+1.772	+1.161	+.697	+.328
1.219	+23.355	+6.519	+4.700	+3.696	+2.998	+2.462	+2.028	+1.341	+.812	+.383
1.250	+23.974	+6.790	+4.920	+3.883	+3.158	+2.599	+2.145	+1.424	+.864	+.409
1.281	+23.646	+6.776	+4.928	+3.899	+3.177	+2.619	+2.164	+1.440	+.875	+.415
1.312	+22.410	+6.502	+4.747	+3.764	+3.073	+2.537	+2.099	+1.399	+.852	+.404
1.344	+20.332	+5.994	+4.396	+3.496	+2.860	+2.366	+1.960	+1.310	+.799	+.379
1.375	+17.511	+5.287	+3.903	+3.116	+2.557	+2.120	+1.760	+1.180	+.722	+.343
1.406	+14.083	+4.431	+3.305	+2.655	+2.189	+1.821	+1.516	+1.021	+.627	+.298
1.437	+10.226	+3.492	+2.652	+2.153	+1.787	+1.494	+1.249	+.847	+.522	+.249
1.469	+6.184	+2.570	+2.013	+1.661	+1.393	+1.174	+.988	+.676	+.420	+.201
1.500	+2.366	+1.816	+1.481	+1.245	+1.058	+.900	+.762	+.528	+.330	+.158
1.531	-1.317	+1.256	+1.106	+.949	+.815	+.698	+.595	+.415	+.261	+.125
1.562	-5.525	+.216	+.633	+.686	+.617	+.540	+.465	+.330	+.209	+.101
1.594	-10.664	-1.382	-.522	-.120	+.107	+.226	+.262	+.231	+.157	+.077
1.625	-15.157	-3.124	-1.916	-2.497	-1.958	-1.556	-1.241	-.765	-.432	-.196
1.656	-18.990	-4.776	-3.292	-3.286	-2.649	-2.163	-1.772	-1.161	-.697	-.328
1.687	-21.735	-5.901	-4.210	-3.696	-2.998	-2.462	-2.028	-1.341	-.812	-.383
1.719	-23.355	-6.519	-4.700	-3.883	-3.158	-2.599	-2.145	-1.424	-.864	-.409
1.750	-23.974	-6.790	-4.920	-3.899	-3.177	-2.619	-2.164	-1.440	-.875	-.415
1.781	-23.646	-6.776	-4.928	-3.764	-3.073	-2.537	-2.099	-1.399	-.852	-.404
1.812	-22.410	-6.502	-4.747	-3.496	-2.860	-2.366	-1.960	-1.310	-.799	-.379
1.844	-20.332	-5.994	-4.396	-3.116	-2.557	-2.120	-1.760	-1.180	-.722	-.343
1.875	-17.511	-5.287	-3.903	-2.655	-2.189	-1.821	-1.516	-1.021	-.627	-.298
1.906	-14.083	-4.431	-3.305	-2.655	-2.189	-1.821	-1.516	-1.021	-.627	-.298
1.937	-10.226	-3.492	-2.652	-2.153	-1.787	-1.494	-1.249	-.847	-.522	-.249
1.969	-6.184	-2.570	-2.013	-1.661	-1.393	-1.174	-.988	-.676	-.420	-.201
2.000	-2.366	-1.816	-1.481	-1.245	-1.058	-.900	-.762	-.528	-.330	-.158

VELOCITY (USUR-U)/MEAN/SORT(FC/2) AS FUNCTION OF TIME FOR VARIOUS LEVELS
 CURVE = 1 2 3 4 5 6 7
 LEVEL YSTAR = .004 .008 .016 .023 .031 .039 .047
 +.3125*-01 12 3 4 5 6 7

+1322*+00

+2331*+00

+3340*+00

+4349*+00

+5358*+00

+6367*+00

+7376*+00

+8385*+00

+9395*+00

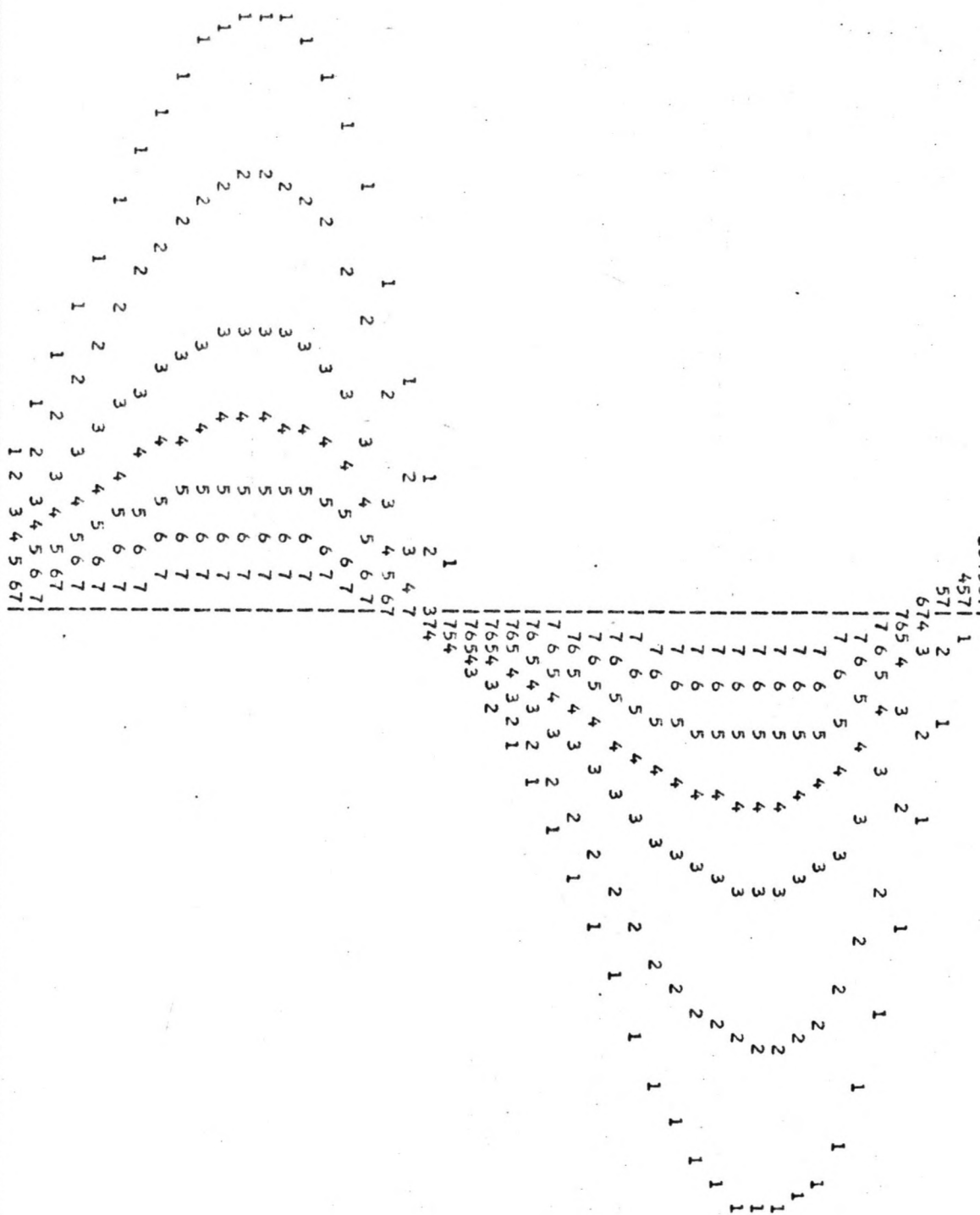
+1020*+01

-.6859*+01

1 POSITION REPRESENTS :+.13718*+00
 1 LINE REPRESENTS :+.20182*-01

0

+6859*+01



VELOCITY (USUR-U)/U*MEAN/SQRT(FC/2) AS FUNCTION OF TIME FOR VARIOUS LEVELS
CURVE = 1 2 3 4 5 6 7
LEVEL YSTAR = .004 .008 .012 .016 .020 .023 .031
+ .3125*-01 1234567 3467 1

+ .1322*+00

+ .2331*+00

+ .3340*+00

+ .4349*+00

+ .5358*+00

+ .6367*+00

+ .7376*+00

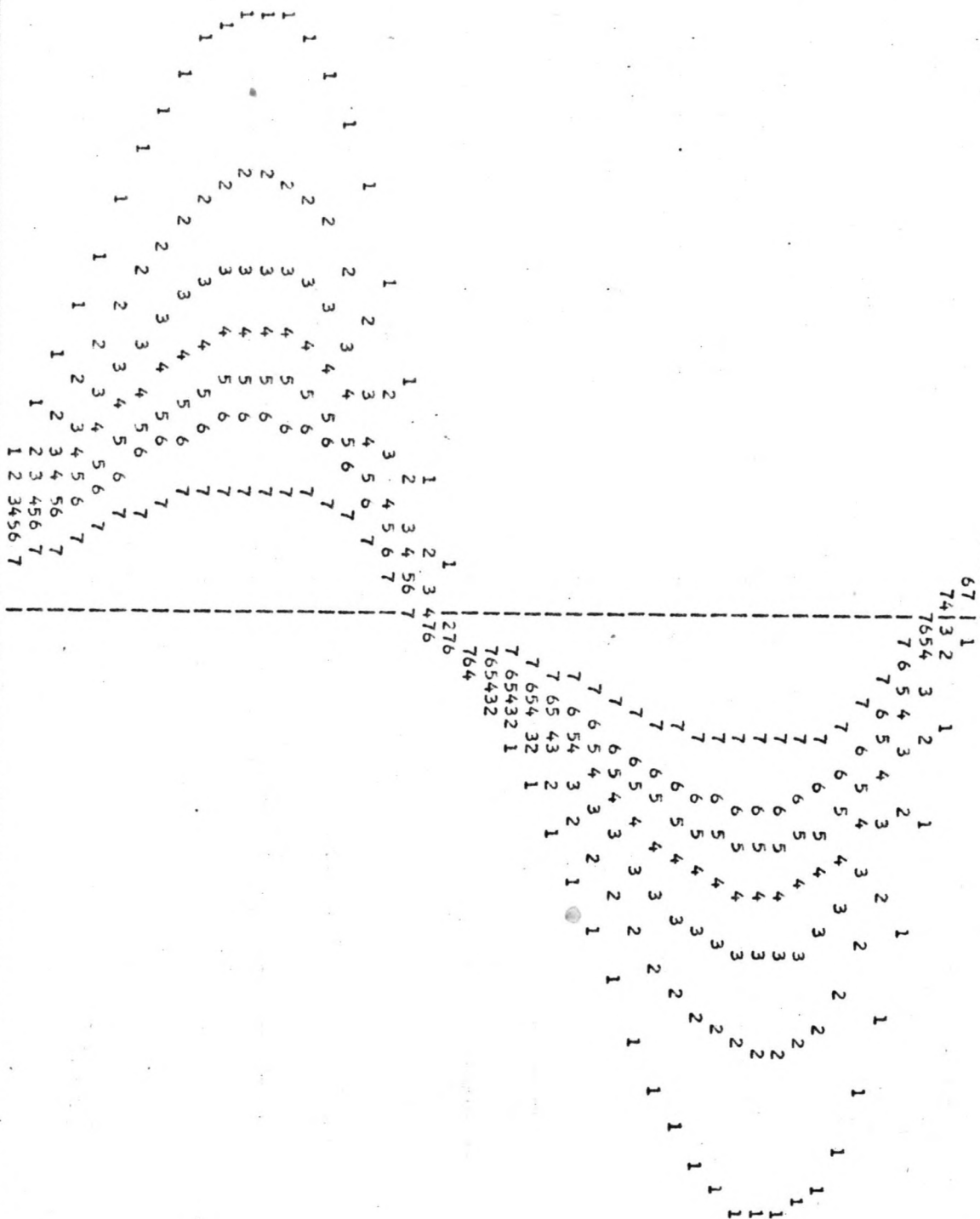
+ .8385*+00

+ .9395*+00

+ .1020*+01

- .6859*+01

1 POSITION REPRESENTS :+.13718*+00
1 LINE REPRESENTS :+.20182*-01



+ .6859*+01

BULAGE 15m

VELOCITY DISTRIBUTION
CURVE = 1
TIME = .125
+ .4687'-01 6
2
0.250
3
0.375
4
0.500
5
0.625
6
0.750
7
0.875
8
1.000

(U)/U_{MEAN}/SQRT(FC/2)



+ .3111'-02
+ .7089'-02
+ .1107'-01
+ .1505'-01
+ .1902'-01
+ .2300'-01
+ .2698'-01
+ .3096'-01
+ .3494'-01
+ .3892'-01
+ .4290'-01
+ .4687'-01
+ .5085'-01
+ .5483'-01
+ .5881'-01
+ .6279'-01
+ .6677'-01
+ .7075'-01
+ .7473'-01
+ .7871'-01
+ .8269'-01
+ .8667'-01
+ .9065'-01
+ .9463'-01
+ .9861'-01
+ 1.0259'-01
+ 1.0657'-01
+ 1.1055'-01
+ 1.1453'-01
+ 1.1851'-01
+ 1.2249'-01
+ 1.2647'-01
+ 1.3045'-01
+ 1.3443'-01
+ 1.3841'-01
+ 1.4239'-01
+ 1.4637'-01
+ 1.5035'-01
+ 1.5433'-01
+ 1.5831'-01
+ 1.6229'-01
+ 1.6627'-01
+ 1.7025'-01
+ 1.7423'-01
+ 1.7821'-01
+ 1.8219'-01
+ 1.8617'-01
+ 1.9015'-01
+ 1.9413'-01
+ 1.9811'-01
+ 2.0209'-01
+ 2.0607'-01
+ 2.1005'-01
+ 2.1403'-01
+ 2.1801'-01
+ 2.2199'-01
+ 2.2597'-01
+ 2.2995'-01
+ 2.3393'-01
+ 2.3791'-01
+ 2.4189'-01
+ 2.4587'-01
+ 2.4985'-01
+ 2.5383'-01
+ 2.5781'-01
+ 2.6179'-01
+ 2.6577'-01
+ 2.6975'-01
+ 2.7373'-01
+ 2.7771'-01
+ 2.8169'-01
+ 2.8567'-01
+ 2.8965'-01
+ 2.9363'-01
+ 2.9761'-01
+ 3.0159'-01
+ 3.0557'-01
+ 3.0955'-01
+ 3.1353'-01
+ 3.1751'-01
+ 3.2149'-01
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+ 3.5731'-01
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+ 3.6925'-01
+ 3.7323'-01
+ 3.7721'-01
+ 3.8119'-01
+ 3.8517'-01
+ 3.8915'-01
+ 3.9313'-01
+ 3.9711'-01
+ 4.0109'-01
+ 4.0507'-01
+ 4.0905'-01
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+ 4.5283'-01
+ 4.5681'-01
+ 4.6079'-01
+ 4.6477'-01
+ 4.6875'-01
+ 4.7273'-01
+ 4.7671'-01
+ 4.8069'-01
+ 4.8467'-01
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+ 8.7074'-01
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+ 16.5082'-01
+ 16.5480'-01
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+ 16.6276'-01
+ 16.6674'-01
+ 16.7072'-01
+ 16.7470'-01
+ 16.7868'-01
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PAGE 152

Y	MEAN	MOD1	P		MOD2	PHASE2	MAX	MIN	MEAN	U(SUR)-U			MAX	MIN
			PHASE1	MOD2						MOD1	PHASE1	MOD2		
.000004	+ .000	1.000	+360.0	.000	+ .0	1.000	-1.000	- .000	23.583	+5.2	.000	+23.974	-23.974	
.003906	- .000	.959	+6.0	.000	+ .0	.966	- .966	- .000	6.603	+15.4	.000	+6.790	-6.790	
.007812	- .000	.921	+9.6	.000	+ .0	.932	- .932	- .000	4.776	+18.6	.000	+4.928	-4.928	
.011719	- .000	.882	+13.0	.000	+ .0	.897	- .897	- .000	3.765	+20.6	.000	+3.899	-3.899	
.015625	- .000	.844	+15.1	.000	+ .0	.860	- .860	- .000	3.059	+22.2	.000	+3.177	-3.177	
.019531	- .000	.804	+17.4	.000	+ .0	.823	- .823	- .000	2.515	+23.5	.000	+2.619	-2.619	
.023437	- .000	.763	+19.6	.000	+ .0	.786	- .786	- .000	2.074	+24.6	.000	+2.164	-2.164	
.031250	- .000	.678	+22.7	.000	+ .0	.703	- .703	- .000	1.374	+26.4	.000	+1.440	-1.440	
.039062	- .000	.595	+25.9	.000	+ .0	.622	- .622	- .000	.833	+27.9	.000	+ .875	- .875	
.046875	- .000	.472	+28.7	.000	+ .0	.497	- .497	- .000	.394	+28.7	.000	+ .415	- .415	

MEAN-VELOCITIES IN A TIDAL FLOW
=====

VALUES OF (U(SUR)-U(MEAN))/U(MEAN)/SQRT (FC/2)

T	Y	.000004	.00391	.00781	.01172	.01562	.01953	.02344	.03125	.03906	.04687
1.031		-.426	-.454	-.402	-.354	-.310	-.270	-.232	-.164	-.106	-.063
1.052		-.291	-.311	-.303	-.275	-.244	-.213	-.184	-.131	-.095	-.050
1.094		-.025	-.027	-.097	-.129	-.140	-.138	-.127	-.097	-.065	-.039
1.125		+.436	+.465	+.318	+.219	+.146	+.092	+.051	+.000	-.017	-.014
1.156		+1.033	+1.102	+.893	+.739	+.615	+.511	+.422	+.277	+.170	+.098
1.187		+1.414	+1.508	+1.254	+1.063	+.904	+.767	+.647	+.443	+.280	+.164
1.219		+1.601	+1.708	+1.429	+1.216	+1.038	+.884	+.748	+.514	+.327	+.192
1.250		+1.686	+1.798	+1.509	+1.286	+1.100	+.938	+.795	+.547	+.348	+.207
1.281		+1.696	+1.809	+1.520	+1.297	+1.111	+.948	+.804	+.554	+.353	+.207
1.312		+1.640	+1.749	+1.472	+1.258	+1.078	+.921	+.761	+.539	+.344	+.202
1.344		+1.526	+1.627	+1.373	+1.175	+1.008	+.862	+.732	+.506	+.323	+.190
1.375		+1.363	+1.454	+1.230	+1.054	+.906	+.776	+.659	+.457	+.292	+.171
1.406		+1.166	+1.243	+1.056	+.908	+.762	+.670	+.571	+.396	+.253	+.149
1.437		+.950	+1.013	+.866	+.748	+.646	+.555	+.474	+.330	+.212	+.125
1.469		+.738	+.767	+.679	+.590	+.512	+.442	+.378	+.265	+.170	+.100
1.500		+.558	+.595	+.520	+.455	+.397	+.344	+.295	+.206	+.134	+.079
1.531		+.426	+.454	+.402	+.354	+.310	+.270	+.232	+.164	+.106	+.063
1.562		+.291	+.311	+.303	+.275	+.244	+.213	+.184	+.131	+.085	+.050
1.594		+.025	+.027	+.097	+.129	+.140	+.138	+.127	+.097	+.065	+.039
1.625		-.436	-.465	-.318	-.219	-.146	-.092	-.051	-.000	+.017	+.014
1.656		-1.033	-1.102	-.893	-.739	-.615	-.511	-.422	-.277	-.170	-.098
1.687		-1.414	-1.508	-1.254	-1.063	-.904	-.767	-.647	-.443	-.280	-.164
1.719		-1.601	-1.708	-1.429	-1.216	-1.038	-.884	-.748	-.514	-.327	-.192
1.750		-1.686	-1.798	-1.509	-1.286	-1.100	-.938	-.795	-.547	-.348	-.207
1.781		-1.696	-1.809	-1.520	-1.297	-1.111	-.948	-.804	-.554	-.353	-.207
1.812		-1.640	-1.749	-1.472	-1.258	-1.078	-.921	-.761	-.539	-.344	-.202
1.844		-1.526	-1.627	-1.373	-1.175	-1.008	-.862	-.732	-.506	-.323	-.190
1.875		-1.363	-1.454	-1.230	-1.054	-.906	-.776	-.659	-.457	-.292	-.149
1.906		-1.166	-1.243	-1.056	-.908	-.762	-.670	-.571	-.396	-.253	-.125
1.937		-.950	-1.013	-.866	-.748	-.646	-.555	-.474	-.330	-.212	-.100
1.969		-.738	-.767	-.679	-.590	-.512	-.442	-.378	-.265	-.170	-.100
2.000		-.558	-.595	-.520	-.455	-.397	-.344	-.295	-.206	-.134	-.079

FC=2*(KAPPA**2/(LN(33*H/E**R))**2 FOR A STATIONARY
FLOW AS FUNCTION OF R/H AND FC AS FUNCTION OF R/H
AND T FOR YMAX= .062
=====

T R/H=	.002	2.062	4.125	6.187	8.250	10.312	12.375	16.500	20.625	24.750
1.031	.025	.008	.275	.704	2.143	12.007	880.202	3.401	1.140	.631
1.062	.009	.008	.065	.138	.232	.358	.527	1.087	2.644	11.520
1.094	.005	.021	.265	.052	.163	.305	.479	1.040	2.602	11.520
1.125	.005	.219	.761	3.088	100.148	3.404	.001	.600	2.396	11.520
1.156	.004	.115	.259	.461	.760	1.228	2.009	7.337	761.095	11.520
1.187	.004	.089	.162	.295	.437	.617	.651	1.620	3.362	11.520
1.219	.004	.080	.159	.254	.371	.519	.709	1.322	2.910	11.520
1.250	.004	.077	.153	.243	.356	.499	.683	1.282	2.860	11.520
1.281	.004	.075	.149	.238	.349	.490	.673	1.268	2.843	11.520
1.312	.004	.074	.147	.235	.345	.485	.667	1.259	2.832	11.520
1.344	.004	.072	.145	.232	.341	.479	.661	1.251	2.822	11.520
1.375	.004	.071	.142	.228	.335	.473	.653	1.241	2.811	11.520
1.406	.004	.068	.138	.222	.329	.465	.644	1.229	2.797	11.520
1.437	.003	.065	.131	.214	.318	.453	.630	1.212	2.778	11.520
1.469	.003	.058	.121	.201	.303	.435	.610	1.187	2.751	11.520
1.500	.000	.053	.105	.181	.260	.409	.582	1.152	2.714	11.520
1.531	.025	.033	.086	.158	.253	.380	.550	1.114	2.673	11.520
1.562	.009	.008	.065	.138	.232	.358	.527	1.087	2.644	11.520
1.594	.005	15.021	.285	.052	.163	.305	.479	1.040	2.602	11.520
1.625	.005	.219	.761	3.088	100.148	3.404	.001	.600	2.396	11.520
1.656	.004	.115	.259	.461	.760	1.228	2.009	7.337	761.095	11.520
1.687	.004	.089	.182	.295	.437	.617	.851	1.620	3.362	11.520
1.719	.004	.080	.159	.254	.371	.519	.709	1.322	2.910	11.520
1.750	.004	.077	.153	.243	.356	.499	.683	1.282	2.860	11.520
1.781	.004	.075	.149	.238	.349	.490	.673	1.268	2.843	11.520
1.812	.004	.074	.147	.235	.345	.485	.667	1.259	2.832	11.520
1.844	.004	.072	.145	.232	.341	.479	.661	1.251	2.822	11.520
1.875	.004	.071	.142	.228	.335	.473	.653	1.241	2.811	11.520
1.906	.004	.068	.138	.222	.329	.465	.644	1.229	2.797	11.520
1.937	.003	.065	.131	.214	.318	.453	.630	1.212	2.778	11.520
1.969	.003	.058	.121	.201	.303	.435	.610	1.187	2.751	11.520
2.000	.000	.047	.105	.181	.260	.409	.582	1.152	2.714	11.520
		.033	.086	.158	.253	.380	.550	1.114	2.673	11.520

CHEZY=19*LOG12*(H/K FOR A STATIONARY FLOW AS FUNCTION OF R/H AND CHEZY-COEFFICIENT=SQRT(2G/FC) AS FUNCTION OF R/H AND T FOR YMAX=.002
=====

T R/H=	.002	2.062	4.125	6.187	8.250	10.312	12.375	16.500	20.625	24.750
63.625	14.014	8.535	5.329	3.055	1.291	.151	2.425	4.189	5.631	
1.031	28.261	50.449	17.492	12.042	9.277	7.471	6.162	4.290	2.751	1.318
1.062	48.064	1.154	8.374	19.532	11.073	8.095	6.464	4.386	2.772	1.318
1.094	60.843	9.555	5.061	2.545	.447	2.424	143.731	5.772	2.889	1.318
1.125	65.838	13.191	8.789	6.585	5.129	4.035	3.156	1.651	.162	1.318
1.155	69.293	14.992	10.484	8.234	6.768	5.692	4.849	3.514	2.439	1.318
1.187	69.557	15.830	11.202	8.870	7.339	6.209	5.313	3.890	2.622	1.318
1.219	70.139	16.160	11.452	9.067	7.496	6.387	5.411	3.949	2.645	1.318
1.250	70.482	16.335	11.575	9.158	7.565	6.387	5.450	3.971	2.653	1.318
1.281	70.772	16.474	11.668	9.225	7.615	6.423	5.476	3.985	2.658	1.318
1.312	71.092	16.620	11.764	9.292	7.663	6.459	5.502	3.999	2.662	1.318
1.344	71.524	16.807	11.883	9.373	7.721	6.501	5.532	4.014	2.667	1.318
1.375	72.214	17.087	12.055	9.488	7.802	6.558	5.573	4.034	2.674	1.318
1.406	73.526	17.569	12.337	9.670	7.925	6.644	5.632	4.063	2.683	1.318
1.437	76.658	18.520	12.847	9.981	8.128	6.780	5.724	4.105	2.696	1.318
1.469	88.276	20.653	13.816	10.520	8.459	6.991	5.862	4.166	2.715	1.318
1.500	INF	24.628	15.276	11.259	8.887	7.254	6.030	4.237	2.735	1.318
1.531	28.261	50.449	17.492	12.042	9.277	7.471	6.162	4.290	2.751	1.318
1.562	48.064	1.154	8.374	19.532	11.073	8.095	6.464	4.386	2.772	1.318
1.594	60.843	9.555	5.061	2.545	.447	2.424	143.731	5.772	2.889	1.318
1.625	65.838	13.191	8.789	6.585	5.129	4.035	3.156	1.651	.162	1.318
1.656	69.293	14.992	10.484	8.234	6.768	5.692	4.849	3.514	2.439	1.318
1.687	69.557	15.830	11.202	8.870	7.339	6.209	5.313	3.890	2.622	1.318
1.719	70.139	16.160	11.452	9.067	7.496	6.387	5.411	3.971	2.658	1.318
1.750	70.482	16.335	11.575	9.158	7.565	6.387	5.450	3.985	2.662	1.318
1.781	70.772	16.474	11.668	9.225	7.615	6.423	5.502	3.999	2.667	1.318
1.812	71.092	16.620	11.764	9.292	7.663	6.459	5.532	4.014	2.674	1.318
1.844	71.524	16.807	11.883	9.373	7.721	6.501	5.573	4.034	2.683	1.318
1.875	72.214	17.087	12.055	9.488	7.802	6.558	5.632	4.063	2.696	1.318
1.906	73.526	17.569	12.337	9.670	7.925	6.644	5.724	4.105	2.696	1.318
1.937	76.658	18.520	12.847	9.981	8.128	6.780	5.862	4.166	2.715	1.318
1.969	88.276	20.653	13.816	10.520	8.459	6.991	5.862	4.237	2.735	1.318
2.000	INF	24.628	15.276	11.259	8.887	7.254	6.030	4.237	2.735	1.318

1/SQRT(FC/2))

[illegible]

HANSWEERT

GET.	GEZ.	GEC.	ARK.	EB - EN VLOED WEGEN BEGIN: GEM.TJ (EB)	
20.1.76					
788					

BULAGE 14

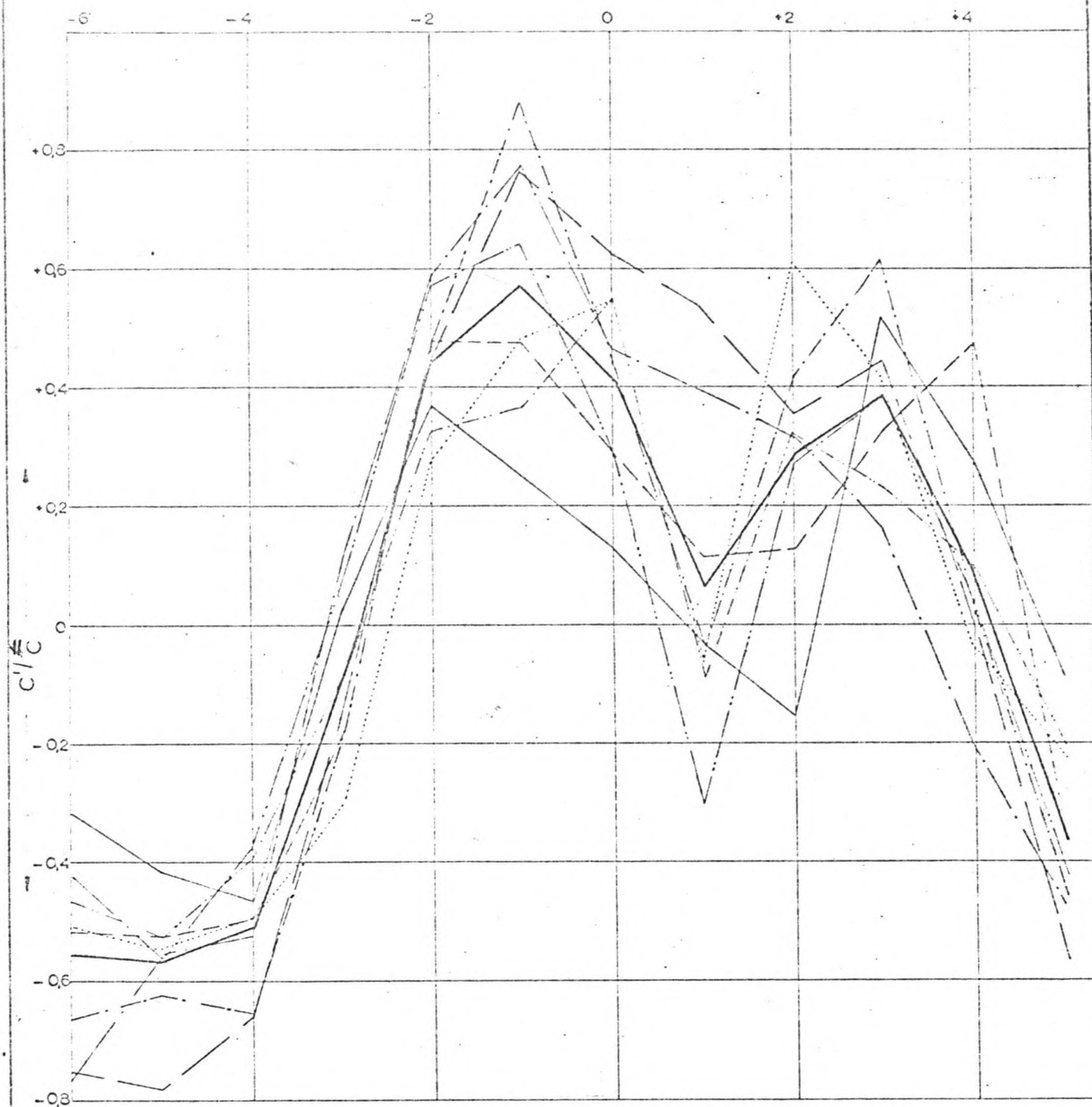
● BEGINPUNT



BATH

BAALHOEK

UREN NA L.W. BATH



TOELICHTING

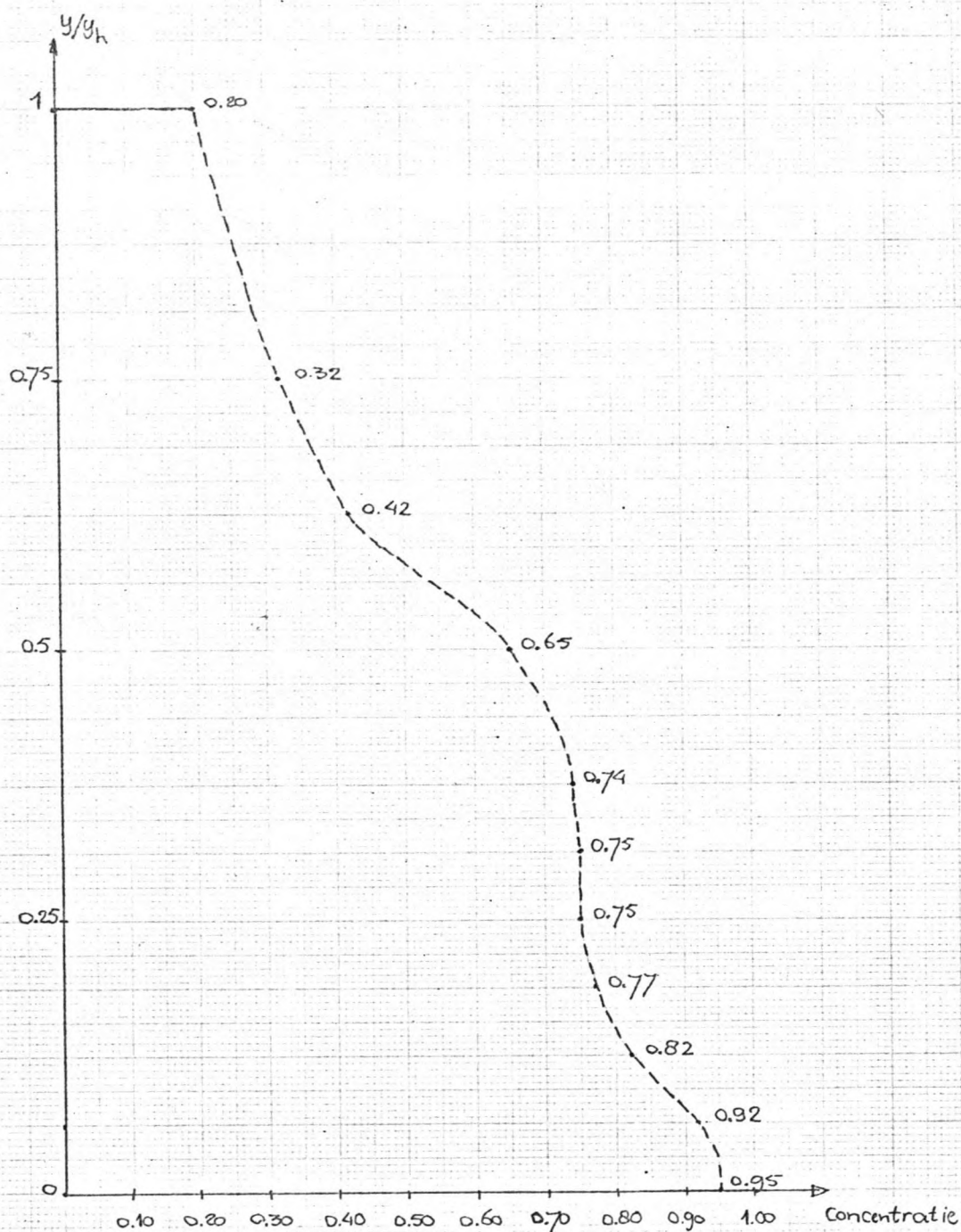
—————	12-11-1971
—————	30-3-1972
—————	29-6-1972
—————	25-10-1972
—————	21-3-1973
—————	18-7-1973
—————	26-9-1973
—————	23-7-1974
—————	GEMIDDELD

GET. GEZ. GEC. AKK.

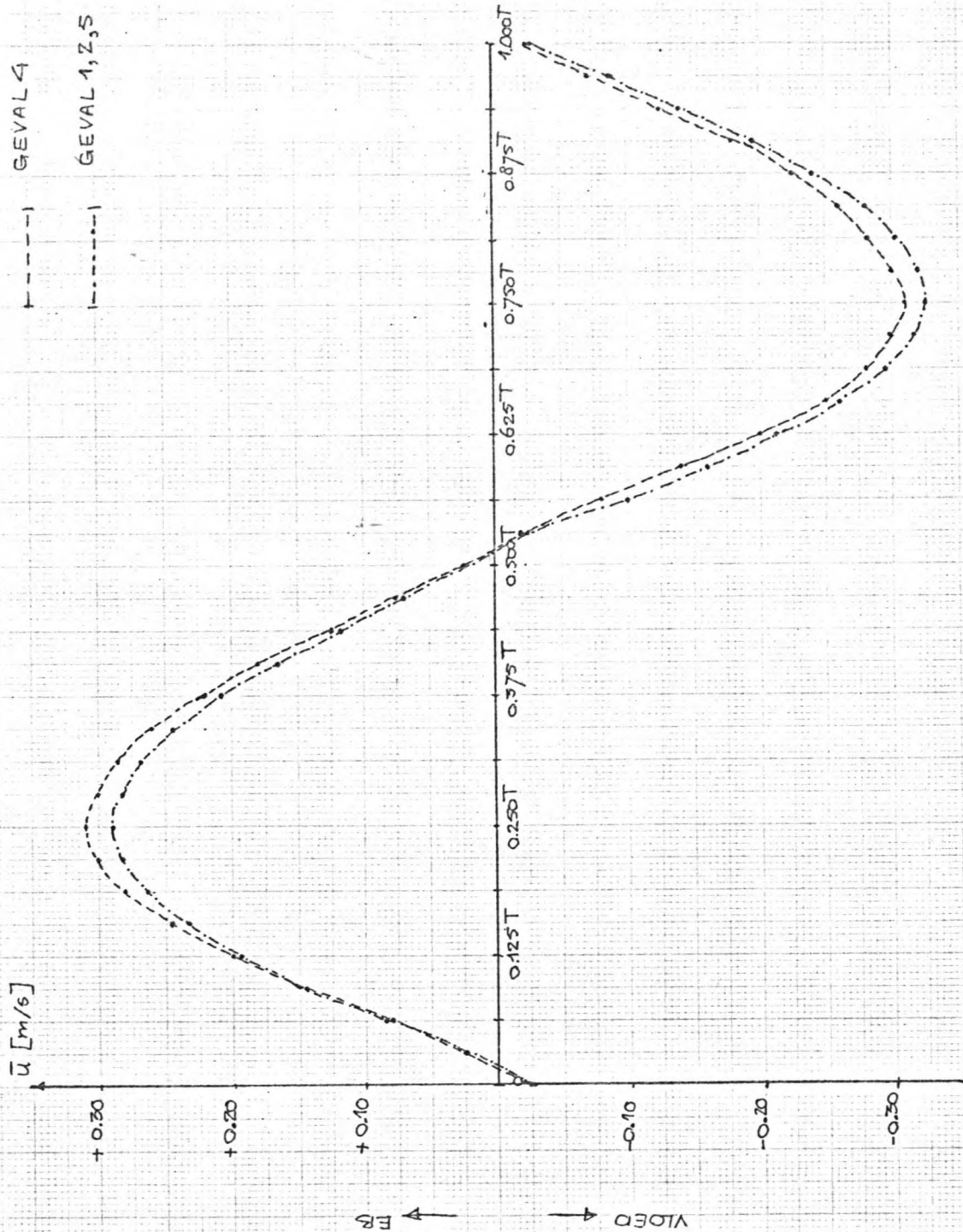
20-1-76
K.B.

WESTERSCHDELDE
VAARWATER BOVEN BATH BOEI 76
GENORMEERDE SLIBGEHALTEN

A1 76.

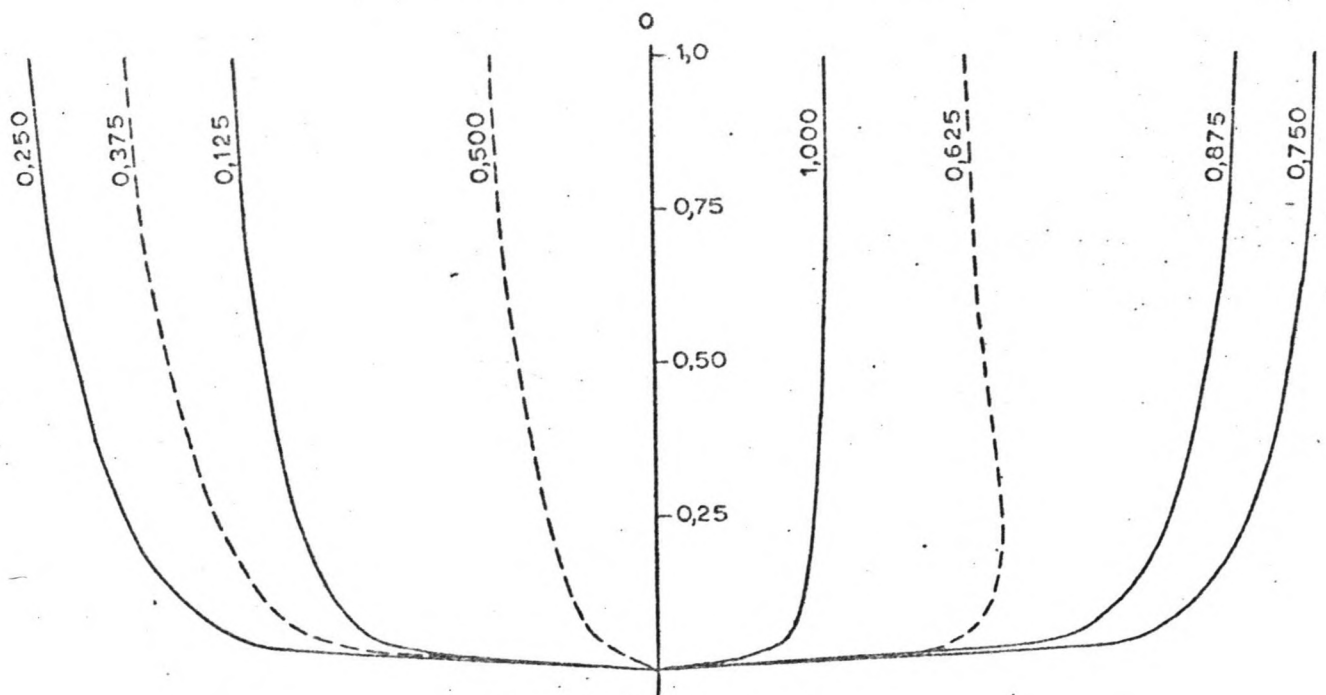


INGEVOERDE SLIBCONCENTRATIEVERTIKAAL IN GEVAL 5



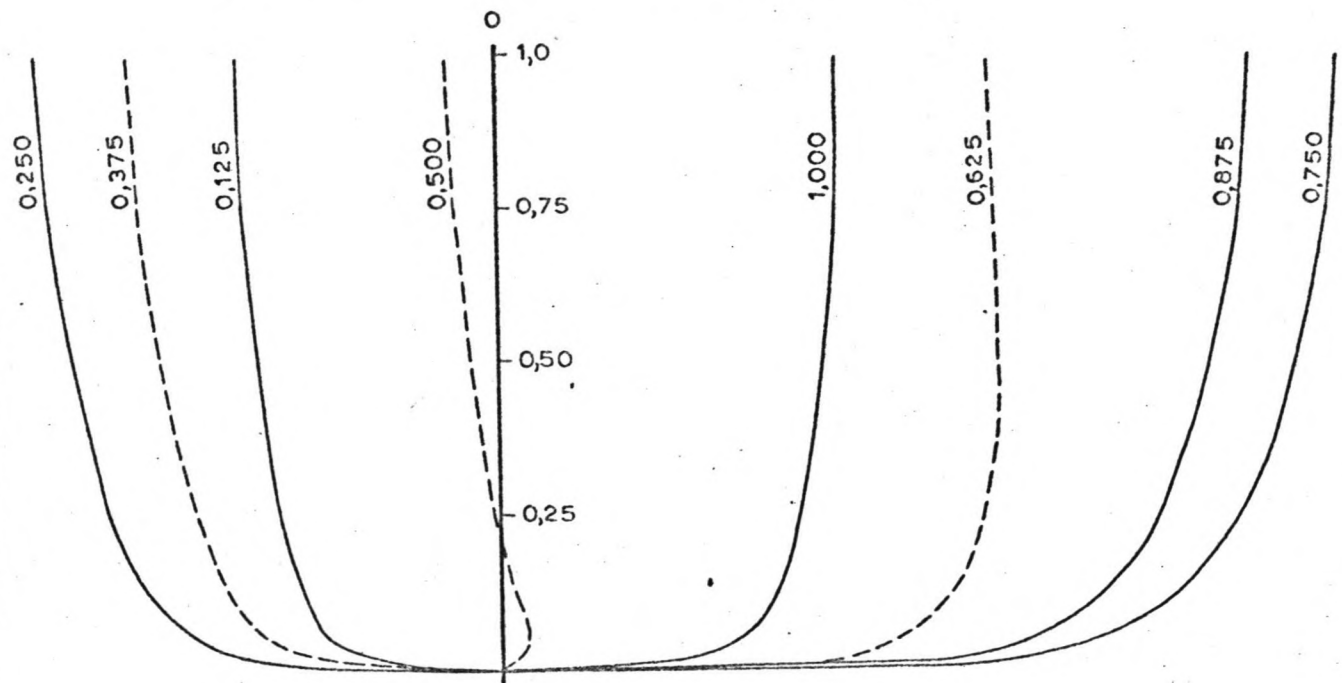
OVERDE VERTIKAAL GEMIDDELTE
SNELHEDEN ALS FUNKTIE VAN DE TIJD

EB ← → VLOED



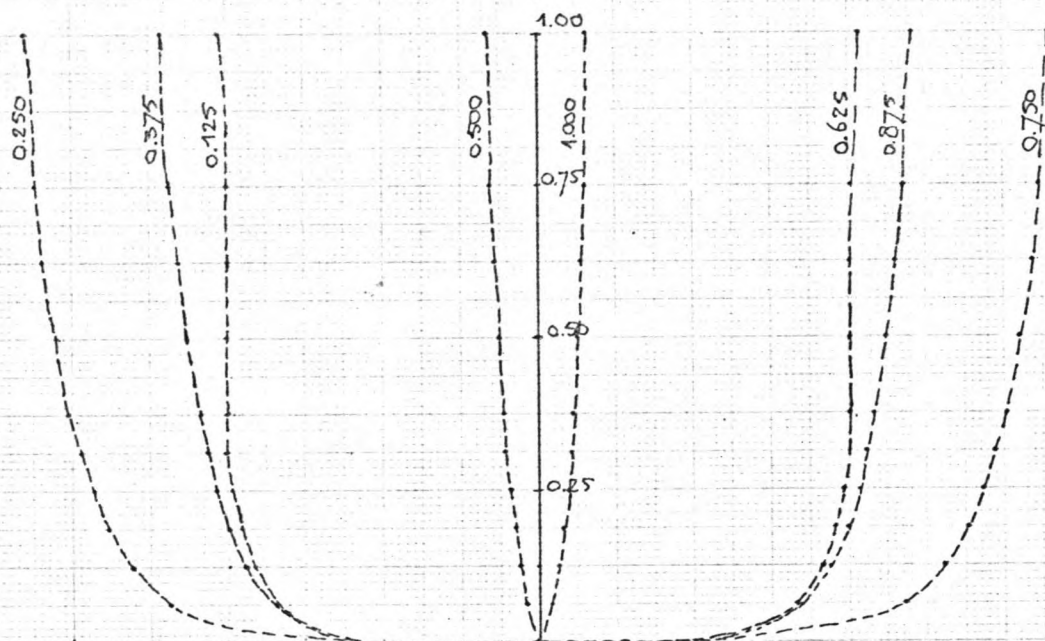
GEVAL 1,2 en 5

EB ← → VLOED

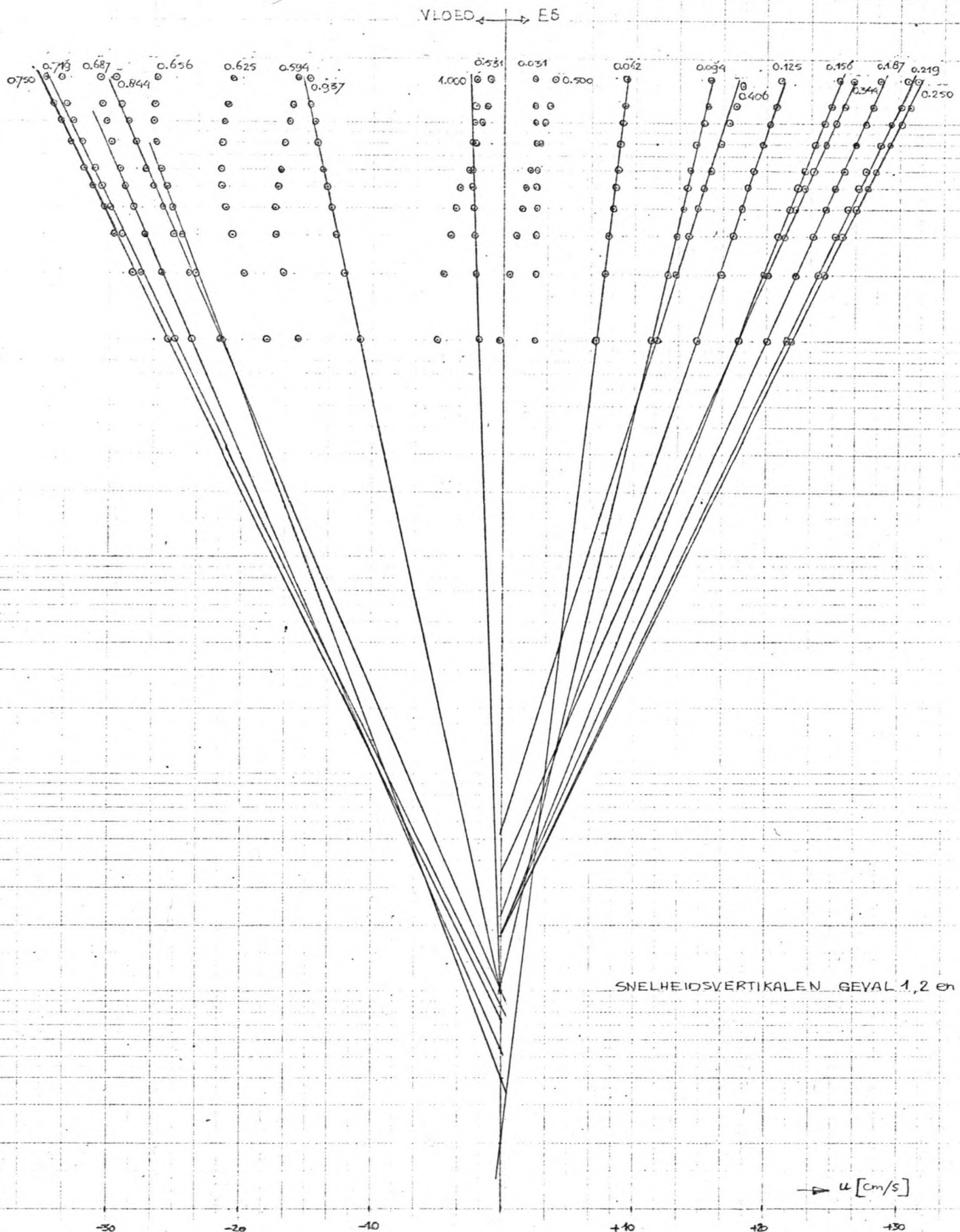


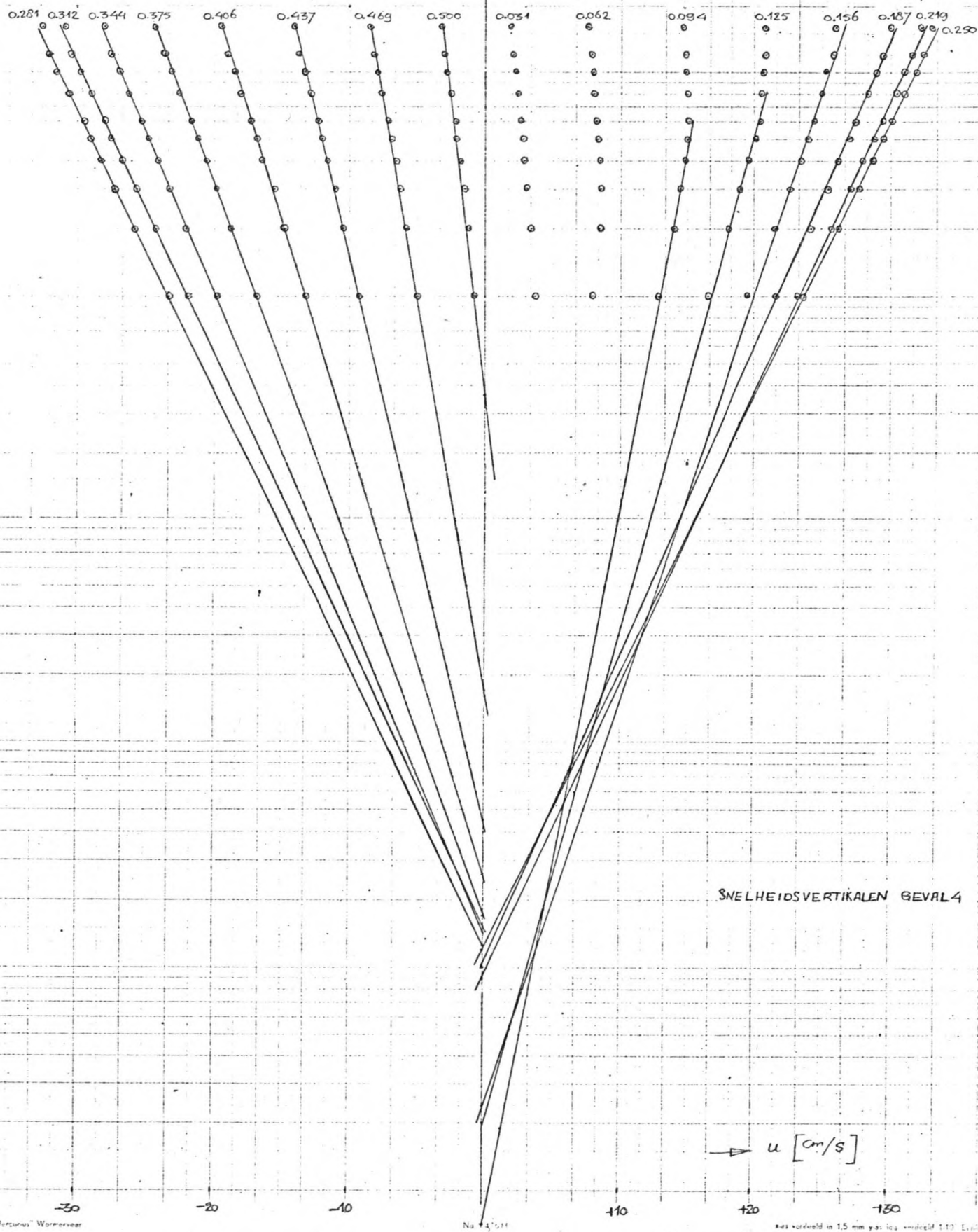
GEVAL 3

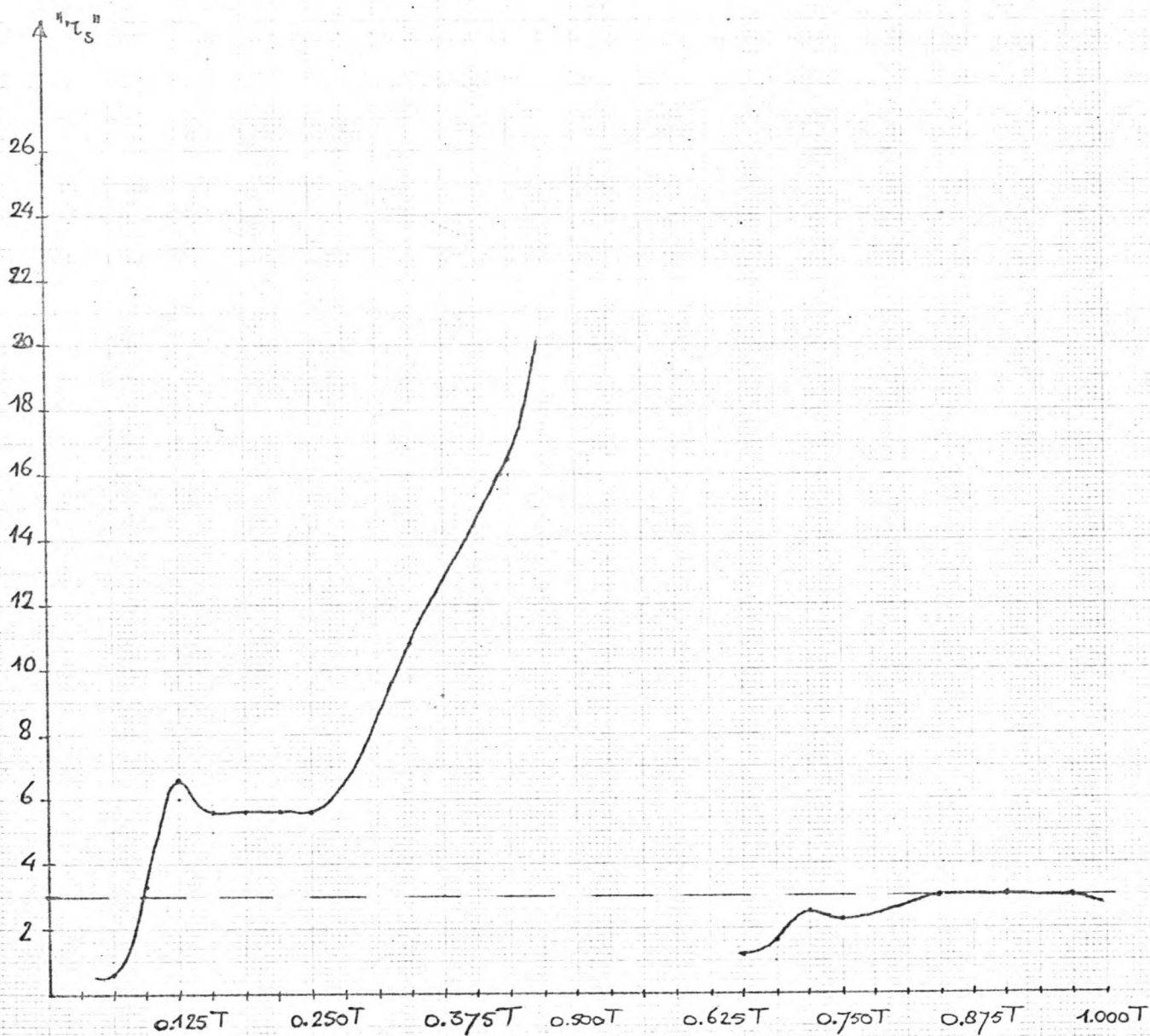
GET.	GEZ.	GEC.	AKK.	SNELHEIDSVERTIKALEN			
FEB. '76 HN						A1	76.77



SNELHEIOSVERTIKALEN GEVAL 4

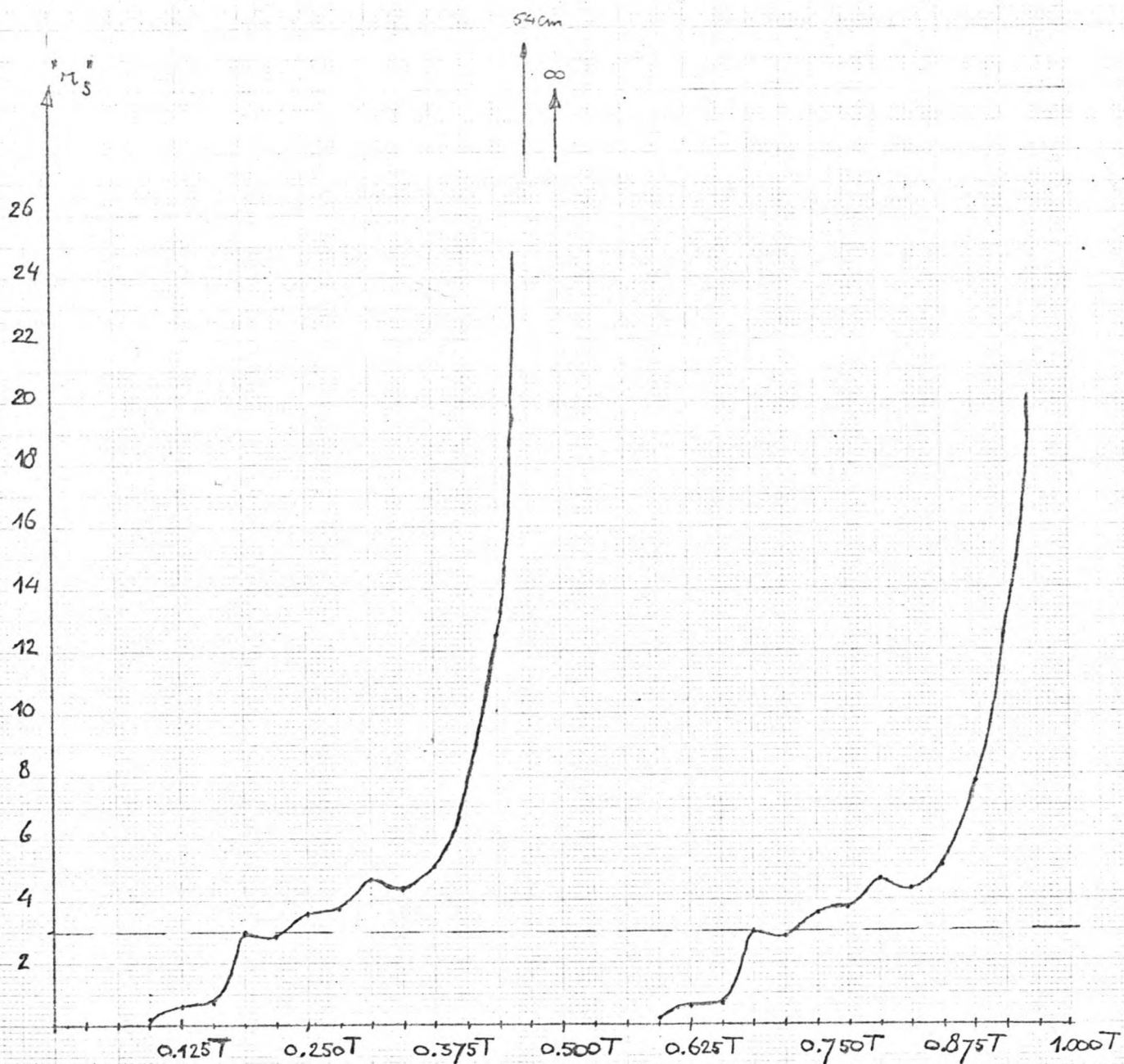






SCHIJNBARE RIBBELHOOGTE
ALS FUNKTIE VAN DE TUD
VOOR GEVAL 1, 2 EN 5.

BIJLAGE 20^a



SCHIJNBARE RIBBELHOOGTE
ALS FUNKTIE VAN DE TIJD
AES ~~FE~~ VOOR GEVAL 4

BIJLAGE 20^b

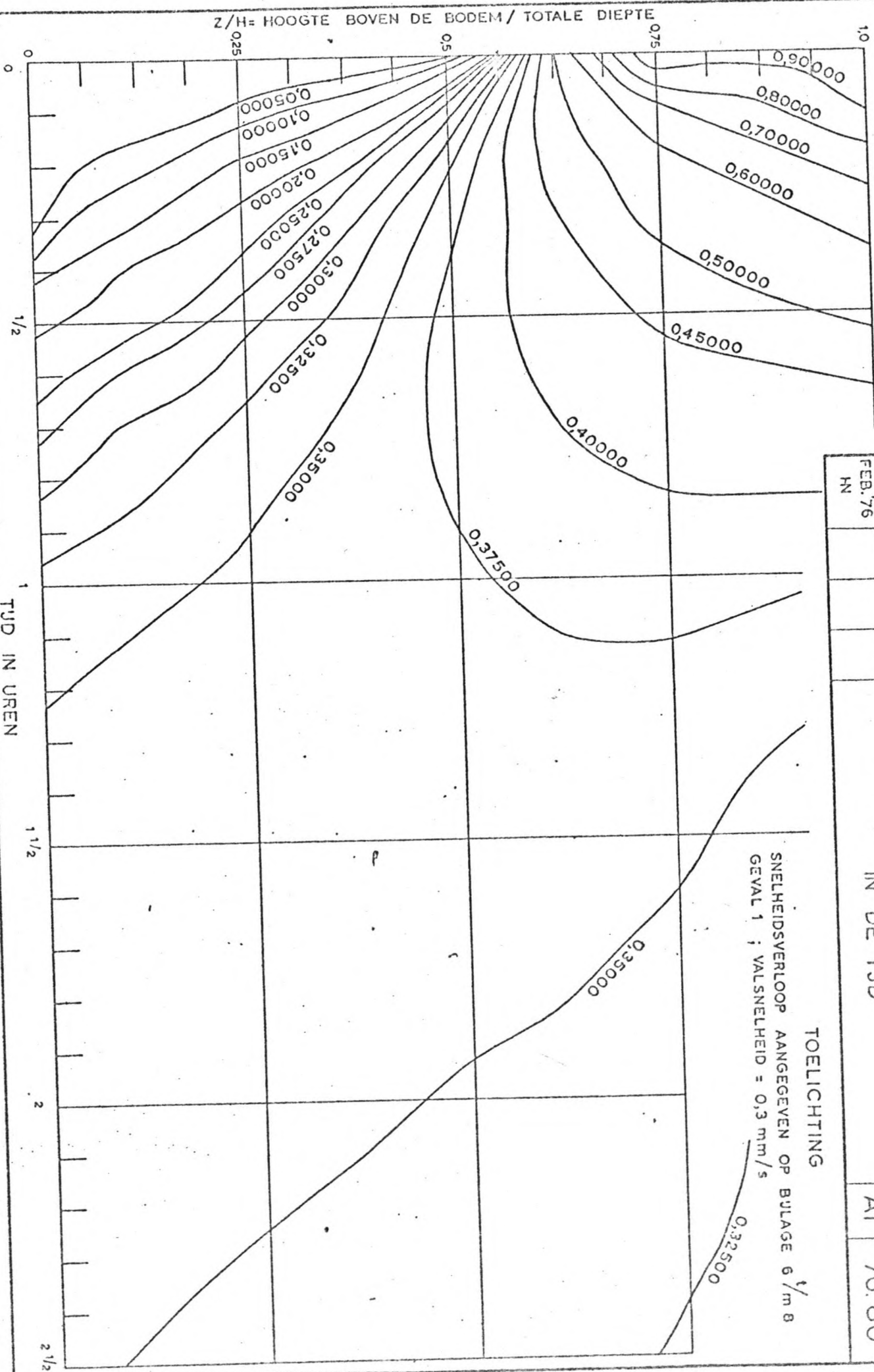
GET.	GEZ.	GEC.	AKK.
FEB. '76			
HN			

VERLOOP VAN DE CONCENTRATIE IN DE TIJD

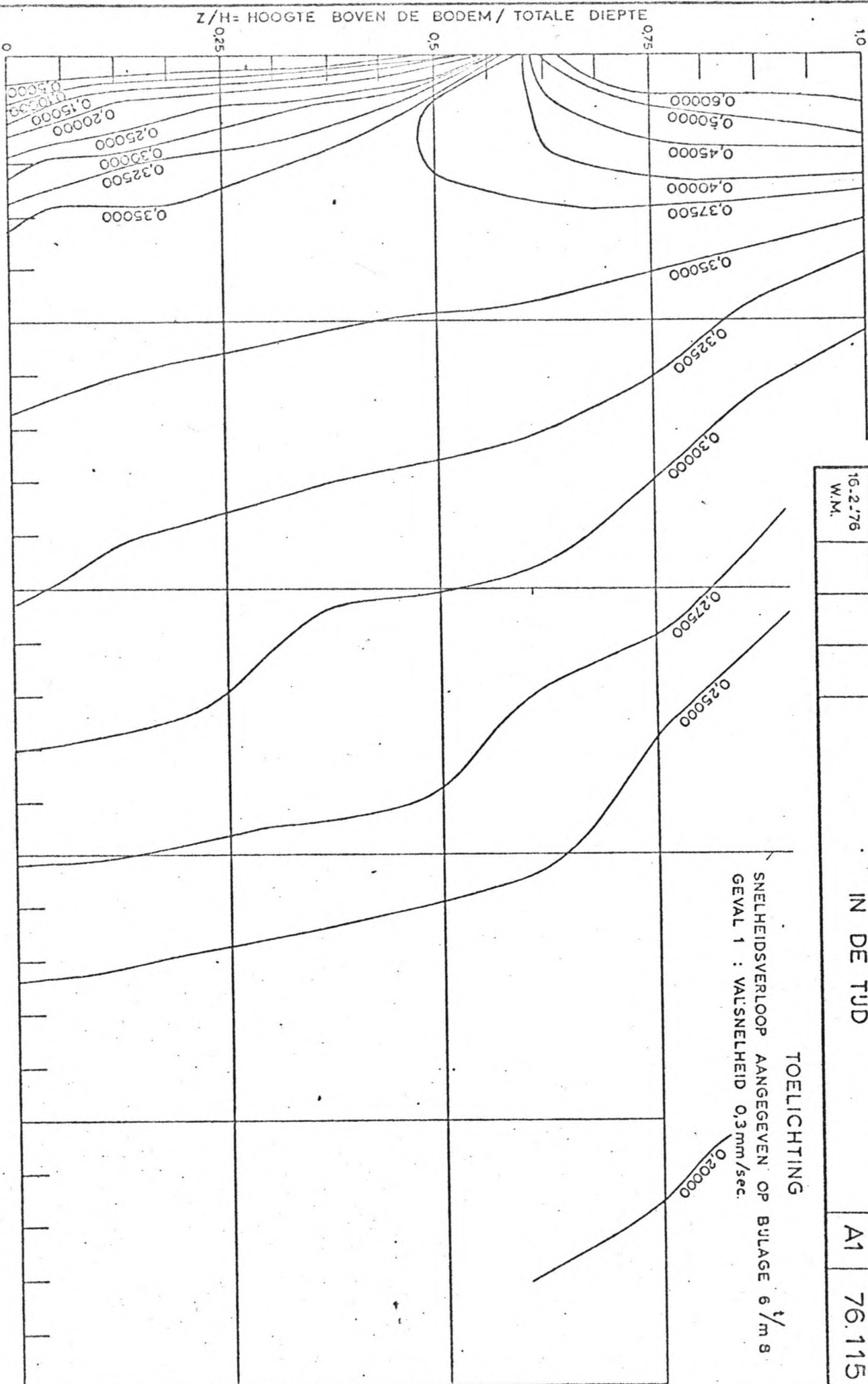
BULAGE 21^a
A1 76.80

TOELICHTING

SNELHEIDSVEROLOP AANGEGEVEN OP BULAGE 6/m 8
GEVAL 1 ; VALSNELHEID = 0,3 mm/s

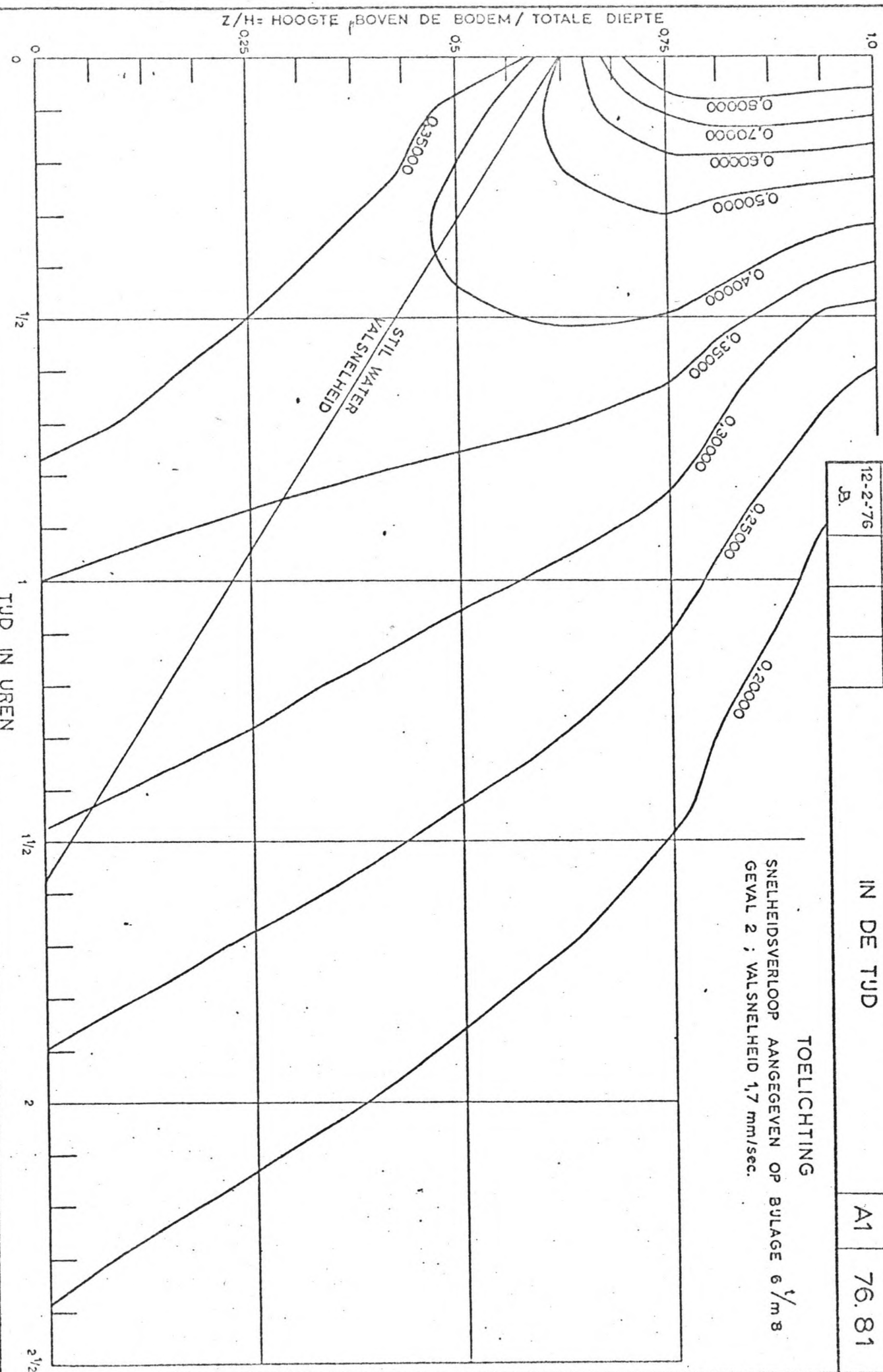


GET.	GEZ.	GEC.	AKK.	VERLOOP VAN DE CONCENTRATIE IN DE TIJD		BULAGE 21 ^b	
16-2-76 W.M.						A1	76.115

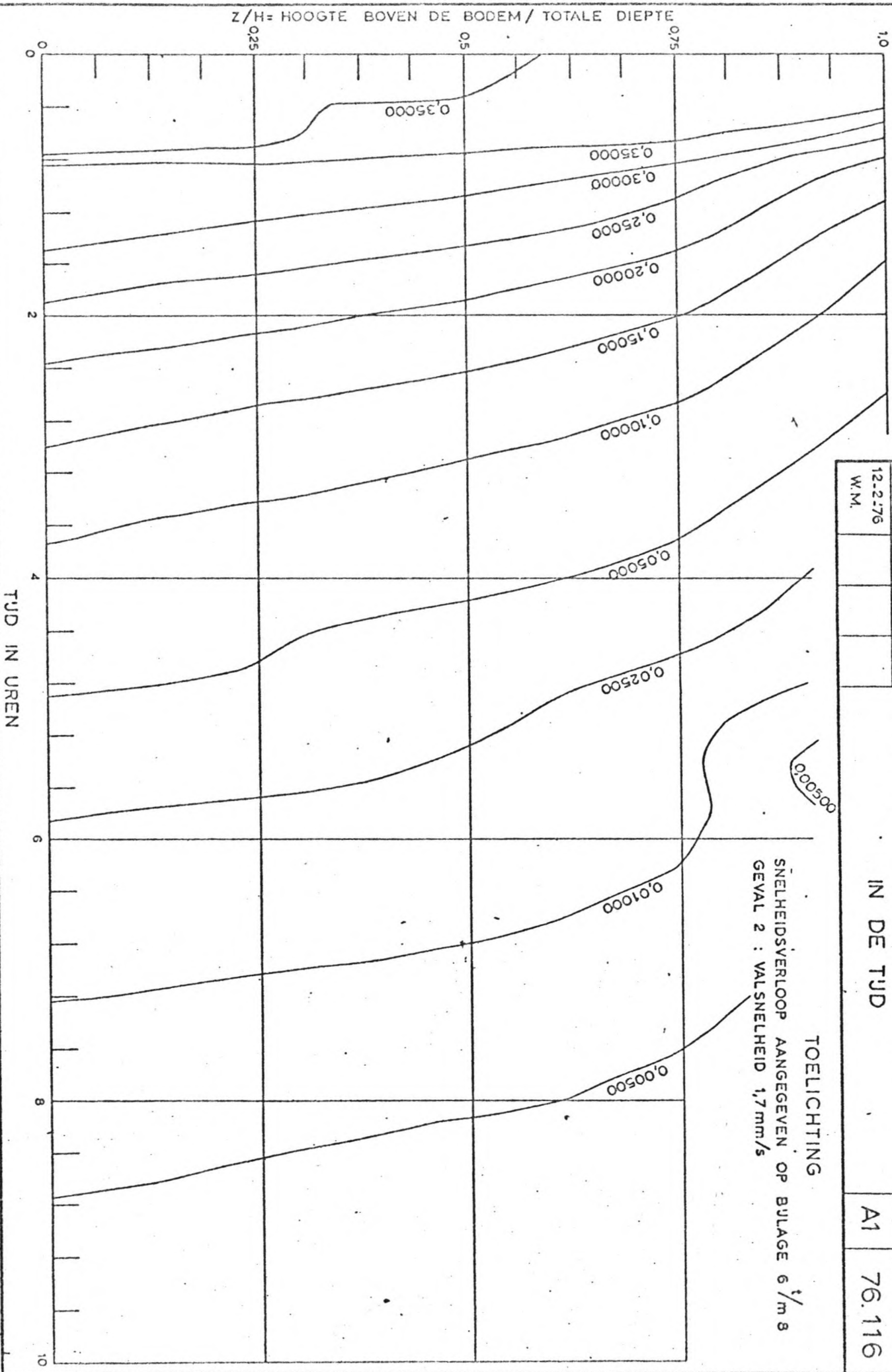


GET.	GEZ.	GEC.	AKK.	VERLOOP VAN DE CONCENTRATIE IN DE TIJD		BIJLAGE 22 ^a	
12-2-76						A1	76.81
B.							

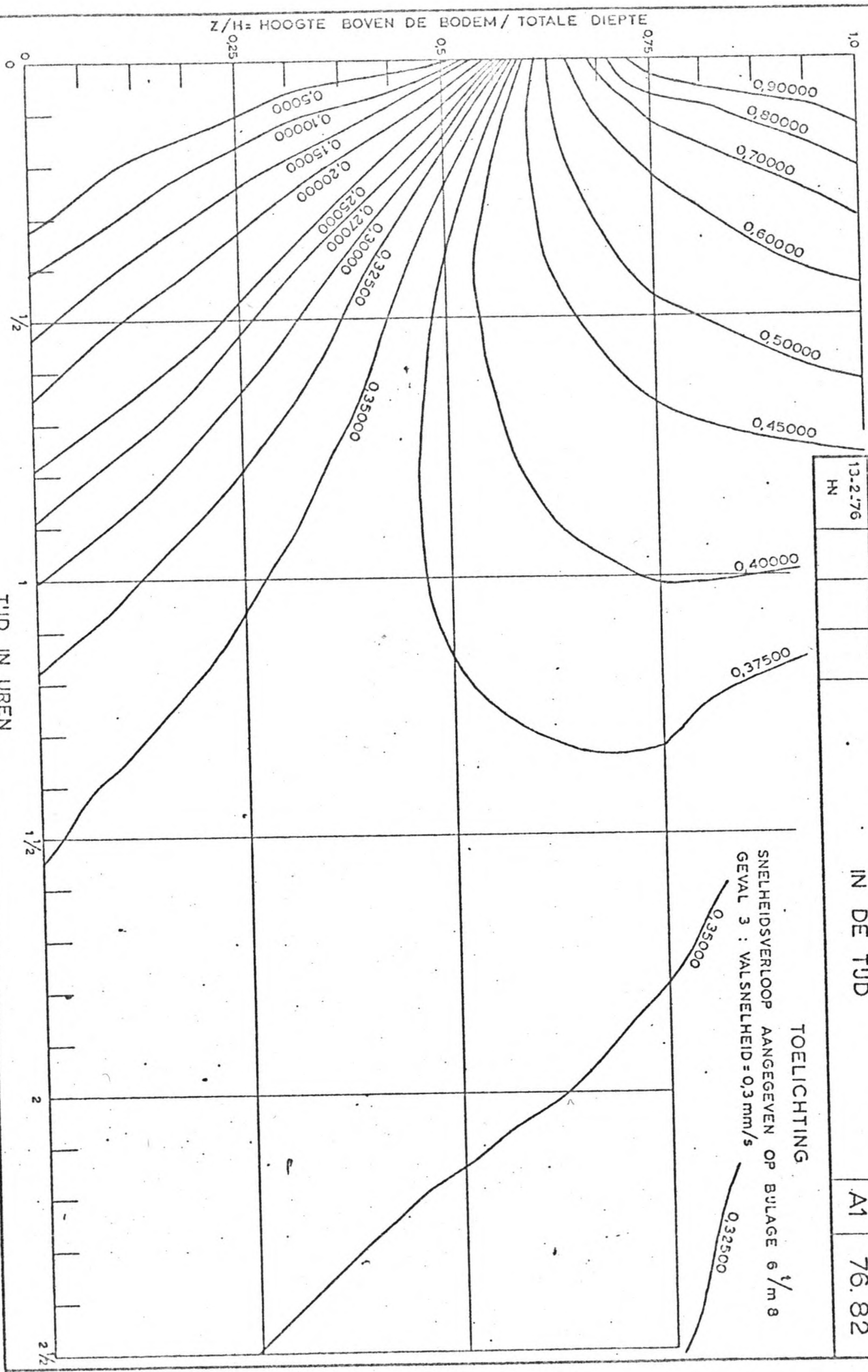
TOELICHTING
 SNELHEIDSVEROOP AANGEGEVEN OP BULAGE 6 1/8
 GEVAL 2 ; VALSNELHEID 1,7 mm/sec.



GET.	GEZ.	GEC.	AKK.	VERLOOP VAN DE CONCENTRATIE IN DE TIJD		BULAGE 22 ^b
12-2-76						A1 76.116



GET.	GEZ.	GEC.	AKK.	VERLOOP VAN DE CONCENTRATIE IN DE TIJD		BULAGE 23 ^a	
13-2-76						A1	76.82



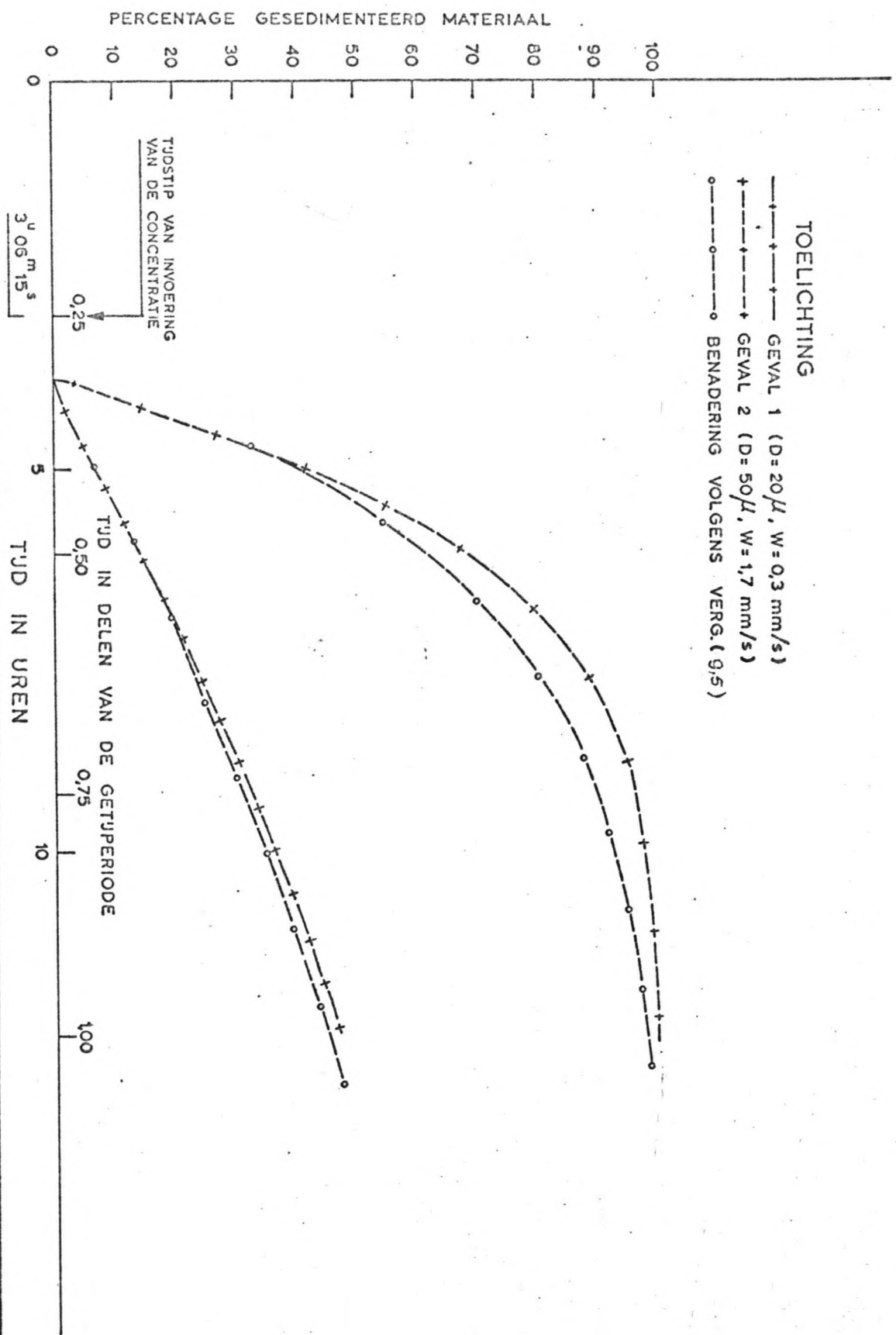
Z/H = HOOGTE BOVEN DE BODEM / TOTALE DIEPTE

TIJD IN UREN

RUKSWAARSTAAT DIRECTIE WATERHUISHOUDING EN WATERBEWEGING

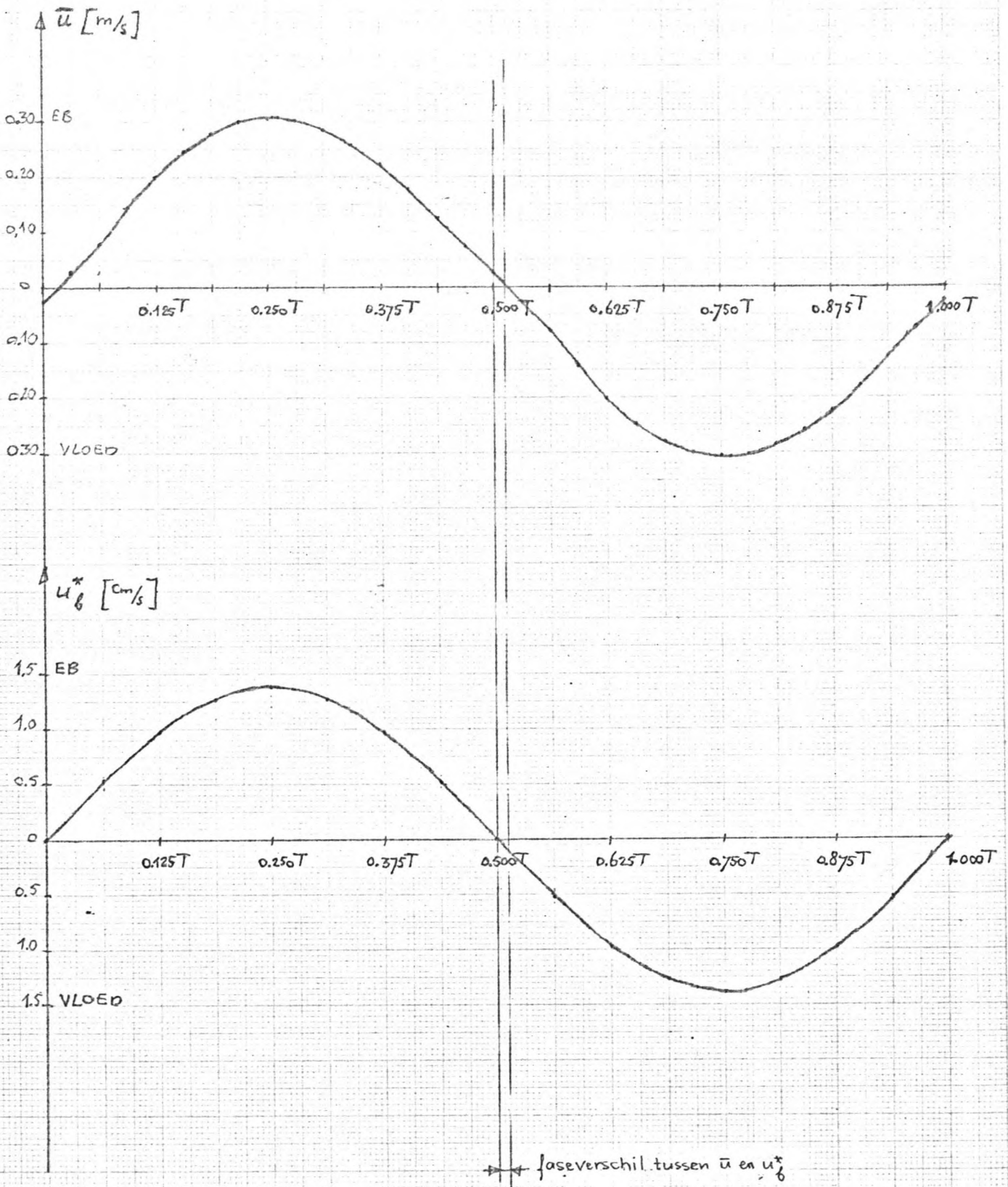
TOELICHTING

- +—+— GEVAL 1 ($D = 20 \mu$, $W = 0,3 \text{ mm/s}$)
- - - + - - - GEVAL 2 ($D = 50 \mu$, $W = 1,7 \text{ mm/s}$)
- o - - - o - - - BENADERING VOLGENS VERG. (9,5)



GET.	GEZ.	GEC.	AKK.	PERCENTAGE GESEDIMENTEERD MATERIAAL ALS FUNCTIE VAN DE TJD	
13-2-76				A1	76.117
W.M.					

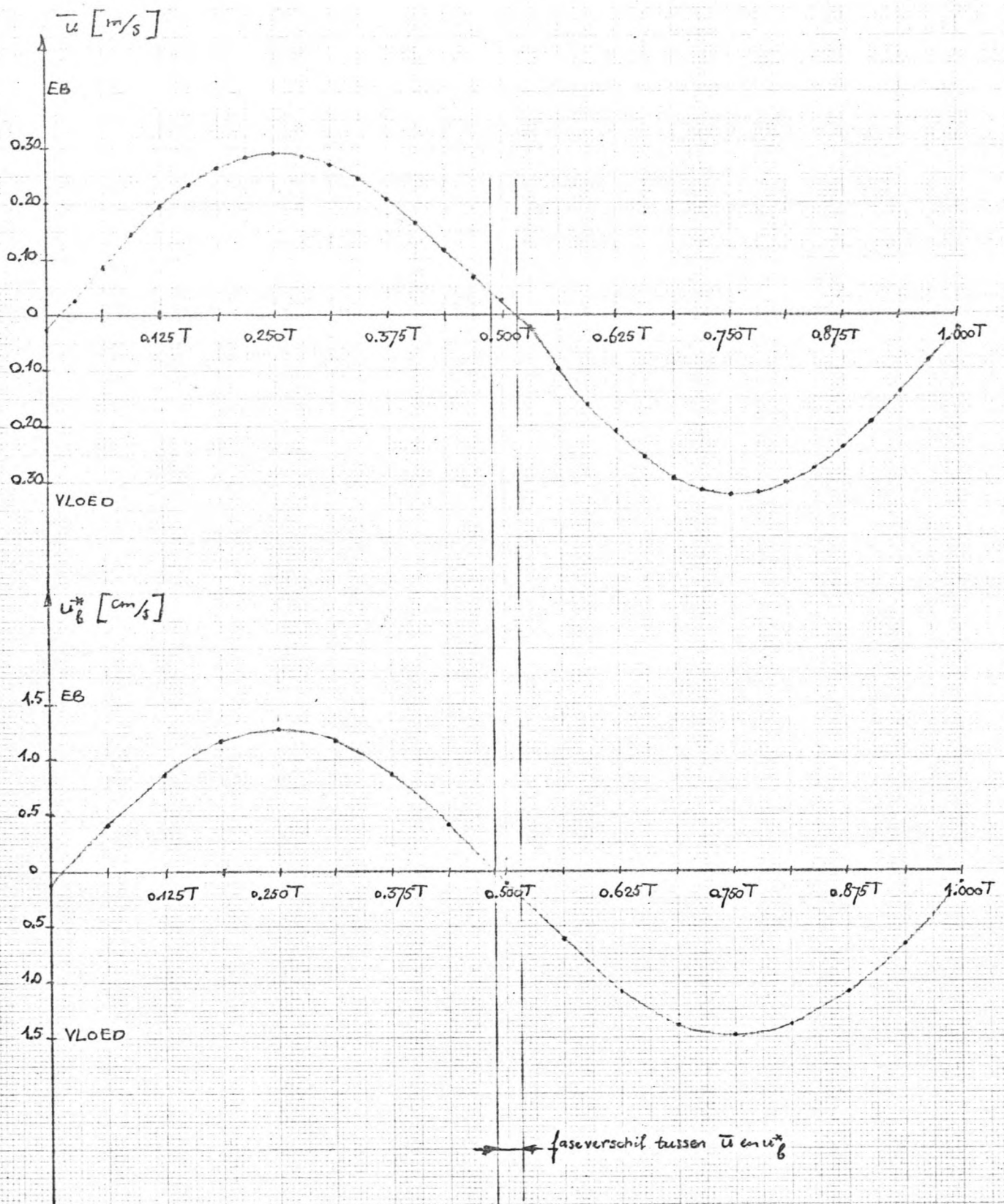
GEVAL 4



BIJLAGE 27

VERLOOP VAN DE GEMIDDELDDE SNELHEID
EN VAN DE BODEMSCHUIFSPANNINGSSNEL-
HEID.

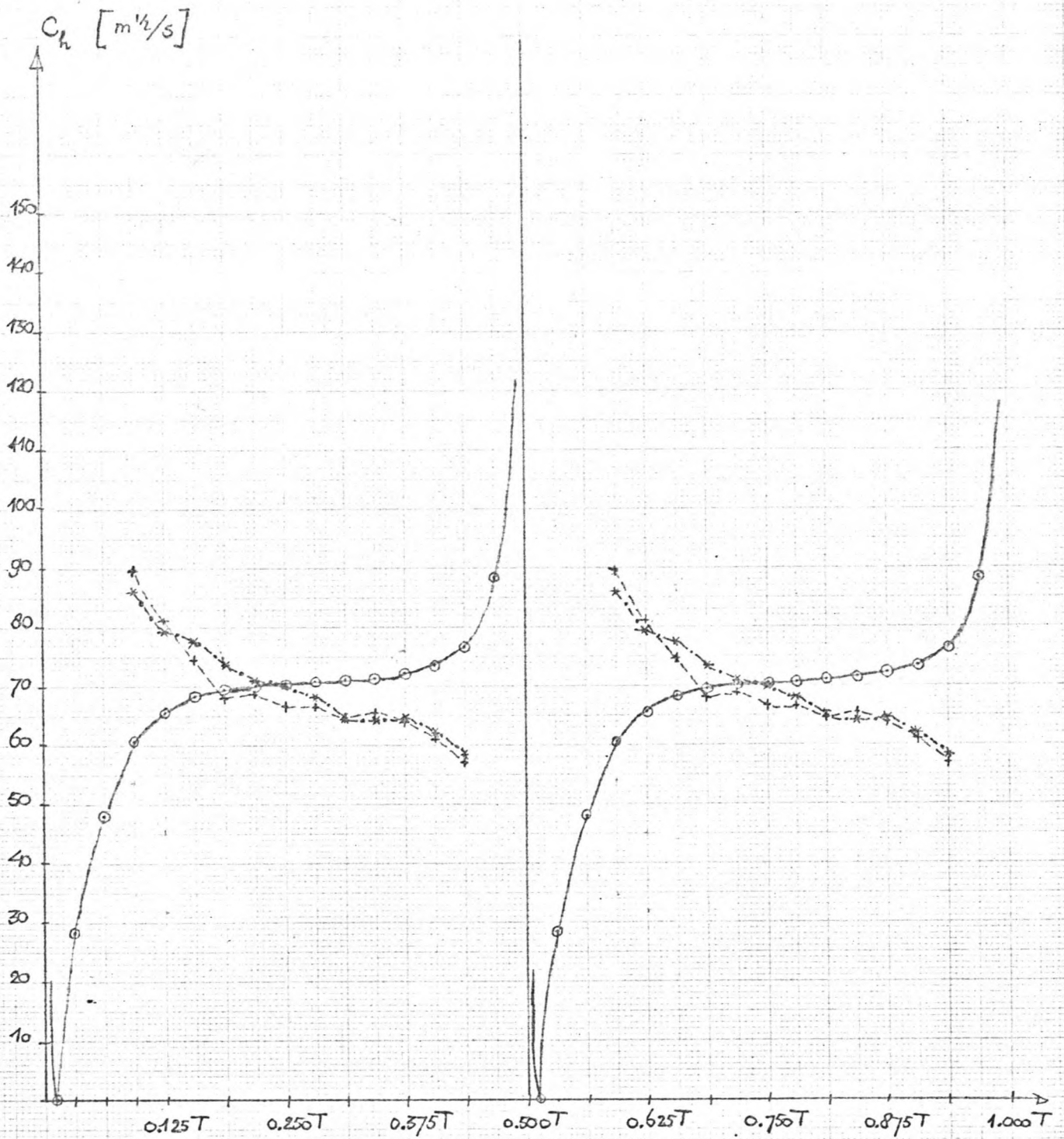
GEVAL 1,2 en 5



BIJLAGE 28

VERLOOP VAN DE GEMIDDELTE SNELHEID EN
VAN DE BODEMSCHUIFSPANNINGSSNELHEID.

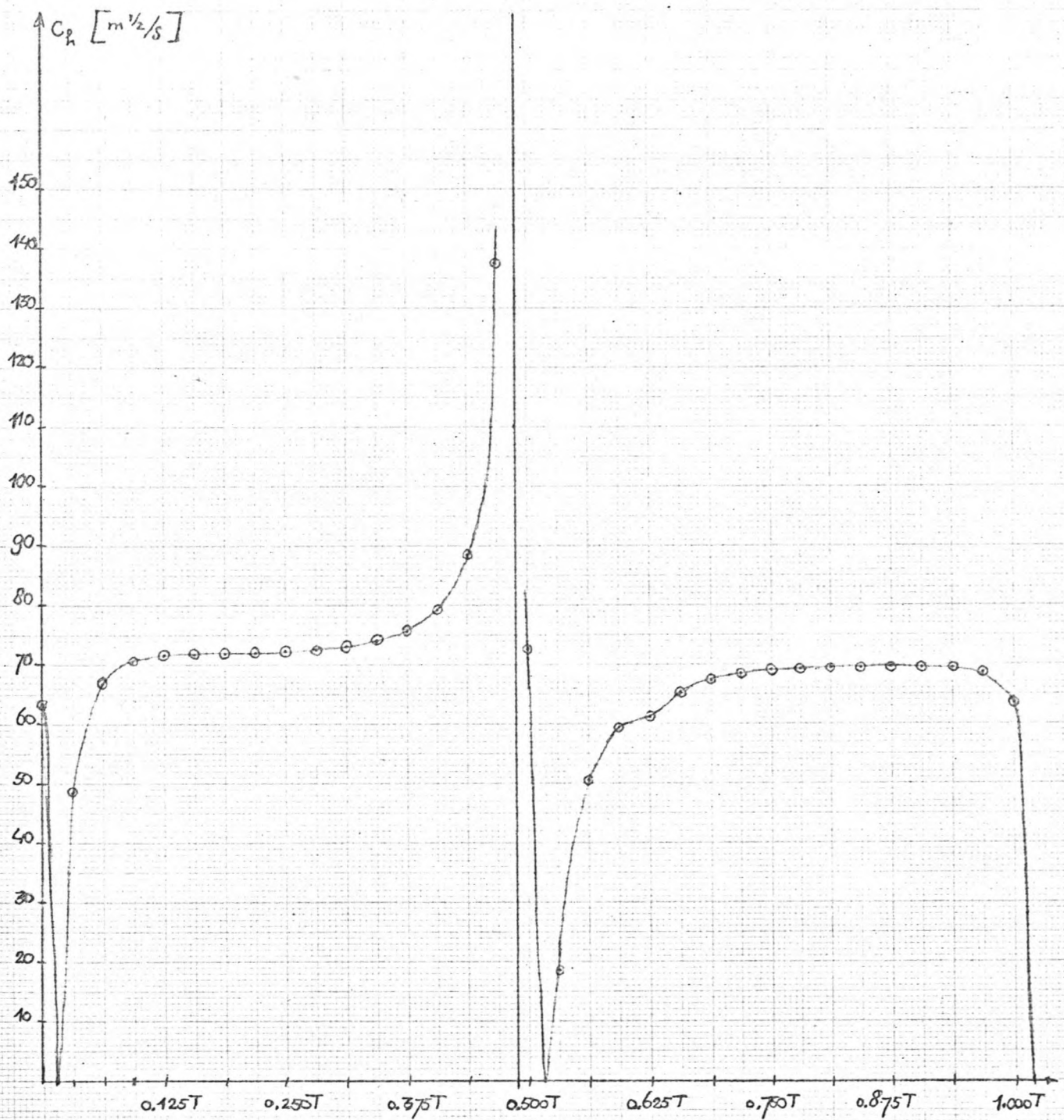
GEVAL 4



BIJLAGE 29

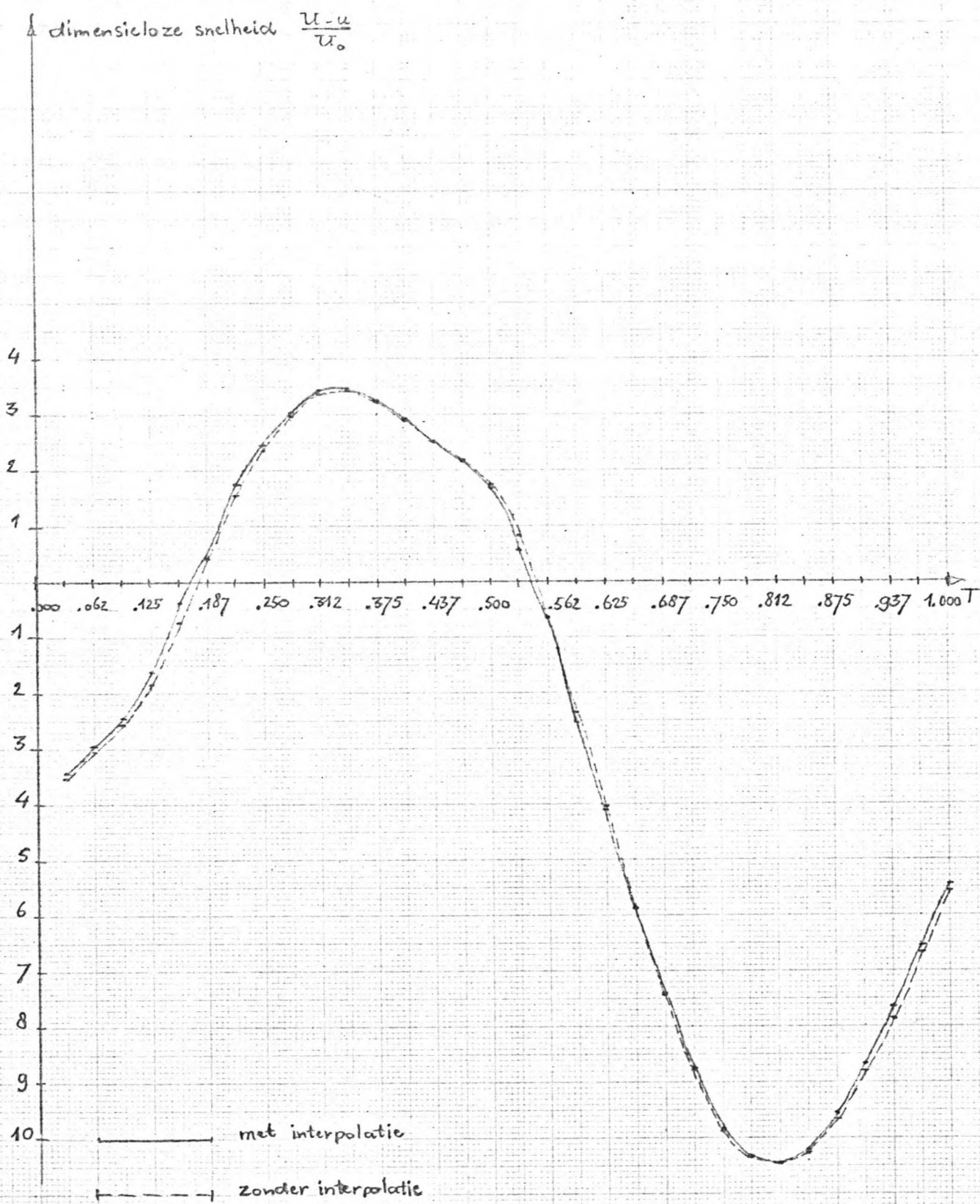
VERLOOP VAN DE CHEZY-COEFFICIENT
ALS FUNKTIE VAN DE TND.

GEVAL 1,2 en 5



BIJLAGE 30

VERLOOP VAN DE CHEZY-COEFFICIENT
ALS FUNKTIE VAN DE TIJD



134 pages of covered.
H. Schaar.