Ms 5098/20-23. Eötvös Loránd jegyzetei a Balatoni felmérési térképekhez

Ms 5098 /20

Nyomás a Bubrichban.

Ad. Folyadékok felszínén

feszültség.

$$z' = a\left(\cos\frac{\varepsilon}{2} + \sin\frac{\varepsilon}{2}\right)\left\{1 + \frac{a}{n}c + \frac{a}{n}\frac{\partial c}{\partial\varepsilon}\varepsilon + \frac{1}{9}\frac{a^2}{n^2}\right\}$$

$$z = a\left(\cos\frac{\varepsilon}{2} - \sin\frac{\varepsilon}{2}\right)\left(1 - \frac{a}{n}c + \frac{a}{n}\frac{\partial c}{\partial\varepsilon}\varepsilon + \frac{1}{9}\frac{a^2}{n^2}\right\}$$

$$z' - z = a2\cos\frac{\varepsilon}{2}\frac{a}{n}c + a\sin\frac{\varepsilon}{2}\left\{2 + 2\frac{a}{n}\frac{\partial c}{\partial\varepsilon}\varepsilon + 2\frac{1}{9}\frac{a^2}{n^2}\right)$$

$$z' - z = \frac{p}{\delta} = \frac{4f}{rs} = \frac{4}{\pi\lambda}\frac{a^2}{2}\lambda b = \frac{2a^2}{r}b$$

$$\frac{a}{r}b = \cos\frac{\varepsilon}{2}\frac{a}{n}c + \sin\frac{\varepsilon}{2}\left(1 + \frac{a}{n}\frac{\partial c}{\partial\varepsilon}\varepsilon + \frac{1}{9}\frac{a^2}{n^2}\right)$$

$$b = \cos\frac{\varepsilon}{2}\frac{r}{n}c + \frac{\lambda}{2a}\left(1 + \frac{a}{n}\frac{\partial c}{\partial\varepsilon}\varepsilon + \frac{1}{9}\frac{a^2}{n^2}\right)$$

$$1 - \frac{1}{2}\frac{\varepsilon^2}{4}$$

$$b = \frac{r}{n}c - \frac{1}{8}\frac{r}{n}c\varepsilon^2 + \frac{\lambda}{2a}\left(1 + \frac{a}{n}\frac{\partial c}{\partial\vartheta}\varepsilon + \frac{1}{9}\frac{a^2}{n^2}\right)$$

$$\frac{\partial c}{\partial\varepsilon} = -0{,}054$$

$$\varepsilon = \frac{\pi}{3}$$

$$\frac{\partial c}{\partial\varepsilon} = \frac{1}{20} \quad \frac{a}{n} = \text{legfeljebb} = \frac{1}{3} \quad \varepsilon = \frac{1}{8}$$

tehát $\cdot \frac{1}{400}$.

egyenlőtlen. $\frac{a^2}{n^2} = \frac{1}{9} \quad \frac{1}{9}\cdot\frac{1}{9} = \frac{1}{80}$

$$\frac{1 - \frac{1}{2}\frac{1}{\sqrt2}}{3\sqrt2\,\frac{1}{2}}$$

$$\sin\frac{\varepsilon}{2} = \frac{\sin\varepsilon}{2\cos\frac{\varepsilon}{2}}$$

$$\frac{2 - \frac{1}{\sqrt2}}{3\sqrt2}$$

$$-\frac{c}{2}\frac{1}{\sqrt2}\frac{a^2}{n^2}\sin\frac{\vartheta}{2}\,\varepsilon.$$

$$\frac{1}{9}\frac{1}{3}\frac{1}{2}. \quad \frac{1}{9}\frac{1}{3}\frac{1}{2} \quad \frac{1}{54}$$

$$\frac{2\sqrt2 - 1}{6}$$

$$c = \frac{1 - \cos^2\frac{\vartheta}{2}}{3\sqrt2\sin^2\frac{\vartheta}{2}}$$

$$\frac{\partial c}{\partial\vartheta} \quad \frac{\partial c}{\partial}$$

$$\frac{\partial c}{\partial\vartheta} = \frac{\beta\cos^2\frac{\vartheta}{2}\sin\frac{\vartheta}{2}}{32\sqrt2\sin^2\frac{\vartheta}{2}}$$

$$-\frac{1 - \cos^2\frac{\vartheta}{2}}{3\sqrt2\sin^3\frac{\vartheta}{2}}\cos\frac{\vartheta}{2}$$

$$\frac{\partial c}{\partial\vartheta} = \frac{\frac{1}{2}\frac{1}{\sqrt2}}{2\sqrt2\cdot\frac{1}{2}} - \frac{1 - \frac{1}{2}\frac{1}{\sqrt2}}{3\sqrt2\frac{1}{2}\frac{1}{\sqrt2}}\frac{1}{\sqrt2}$$

$$\frac{\partial c}{\partial\vartheta} = \frac{1}{2} - \frac{2}{3\sqrt2}\cdot\frac{(2\sqrt2 - 1)}{2\sqrt2}$$

$$= \frac{1}{2} - \frac{2\sqrt2 - 1}{6}$$

$$= \frac{1}{2} -$$

2,8284

1,4142

6 | 1,8284 | 0,304

28

$$+\frac{\frac{3}{2}\cos^2\frac{\vartheta}{2}\sin\frac{\vartheta}{2}}{3\sqrt2\sin\frac{\vartheta}{2}} \quad \frac{1}{4}$$

$$\frac{1}{2}\frac{1}{2}\frac{1}{\sqrt2}$$

$$\frac{1}{4}.$$

$$\frac{\frac{1}{2}\frac{1}{\sqrt2}}{\sqrt2}$$

304

250

−0,054

Febr. 27 délután.

A régi szoppanoldat.

a = 2,201

Parallaxis

Nulla		Tükrö			
62,74 / 82,14	19,40	37,7 / 82,5	44,8		
82,14 / 62,80	19,34	83 / 38,3	44,7	44,8	
	1. 19,39			44,9	
62,80 / 82,18	19,38	37,2 / 82	44,8		
82,18 / 62,74	19,44	83, / 38,1	44,9		

$\frac{50}{2750}$ Corr.

$a = \frac{429,6}{N}$ 0,50

l = 22,15
x = 19,39
r = 22,34
λ = 2,95
b = 0,986

~~62,66~~

95,04 / 62,72	32,32	93 / 21,4	71,6		
62,72 / 94,80	32,08	17 / 88,5	71,5	71,5	
			Corr.	70,36	
94,80 / 62,72	32,08	18,5 / 90	71,8		
62,72 / 94,80	32,08	18,5 / 90	71,5		

~~5275~~ $\frac{6}{275}$ Corr. 1,14

l = 35,18
x = 32,32
r = 35,31
λ = 2,99
b = 0,991

$\frac{6}{275}$ $\frac{6}{275} = 0,016$

85,20
62,66

34,1
86

90
38,1

62,52
86,86) 24,34

86,86) 2,4 28) 24,29
62,58

62,64) 24,26
86,90

36) 55
91

33,1) 54,9) 55 Corr. 54,21
88

33,13) 55
88

$\frac{5,5}{275}$

$\frac{5,5}{275}$ = 0,0144

Corr = 0,79

l = 27,10
x = 24,29
r = 27,26
λ = 2,97
b = 0,989

80,42) 17,96
62,46

62,46) 18,26
80,72

80,72) 18,20) 18,09
62,52

62,52) 17,98
80,50

80,50) 18,04
62,46

42,5) 42,5
85

43) 42,5
85,5

42,0) 42,5) Corr. 41,82
85,5

41,5) 42,5
84

42,5) 42,5
85

$\frac{6}{275}$

$\frac{6}{275}$ = 0,016

Corr. 0,68

~~l = 18,09~~
~~x = 20,91~~
~~18,28~~
l = 20,91
x = 18,09
r = 21,13
λ = 3,04
b = 1,011

62,40) 13,78
76,18

76,18) 13,80
62,38

62,38) 13,74) 13,79
76,22

76,22) 13,82
62,40

62,40) 13,82
76,22

50
83,4) 33,4

~~49~~ 49,6
83) 33,4

49,6
83) 33,4) 33,36 Corrig. 32,79

49,7
83) 33,3

49,7
83) 33,3

$\frac{6}{275}$

Corr. 0,57.

l = 16,40
x = 13,79
r = 16,72
λ = 2,93
b = 0,986

79,40
62,62
62,62
62,5
74,
74,
62,
62,
74,
73,
62,
62,4
73,5
73,5
62,
62,
67,
67,
62,
62,
67,
67,
62
62
67

0,0144
Corr = 0,79

= 0,076
Corr. 0,68

75
Corr.
0,57.

Új adat

a = 2,250 $\frac{6}{375}$

79,40) 16,78 48) 39
62,62 87

62,62 89
50

$\frac{6}{375}$

62,54) 11,74 54) 29,0
74,28 83,3

74,28) 11,78 } 11,76 54) 29,0 } 29,3 Corr 28,83
62,50 83,0

62,50) 11,76 54 29,0
74,26 83,0

l = 14,41
x = 11,76
r = 14,71
λ = 2,95
b = 0,977

Corr 0,47

70,04) 10,88 41,5) 27,8
62,46 69,0

62,46) 11,08 } 11,03 41) 27,8 } 27,8 Corr. 27,36
73,54 68,8

73,54) 11,14 41) 27,8
62,40 68,8

l = 13,68
x = 11,03
r = 14,00
λ = 2,97
b = 0,982

$\frac{6}{375}$ Corr. 0,44

62,16) 5,24 53) 14,7
67,40 67,7

67,40) 5,22 53) 14,7
62,18 67,7

62,18) 5,12 } 5,18 53) 14,8 } 14,76 Corr. 14,52
67,30 67,8

67,30) 5,10 53) 14,8
62,20 67,8

62,20) 5,04 53) 148
67,24 67,8

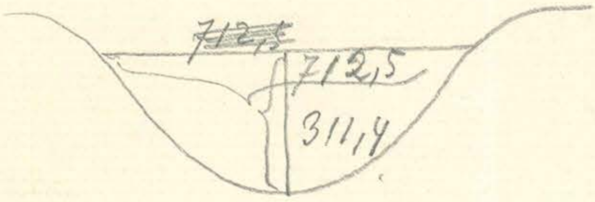
l = 7,26
x = 5,18
r = ~~[illegible]~~ 7,68
λ = 2,50
b = 0,894

$\frac{6}{375}$

Corr. 0,24

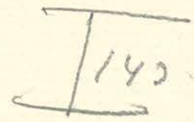
4.

356,2



$l = 24,40$
$x = 21,00$
$r = 24,62$
$\lambda = 3,29$

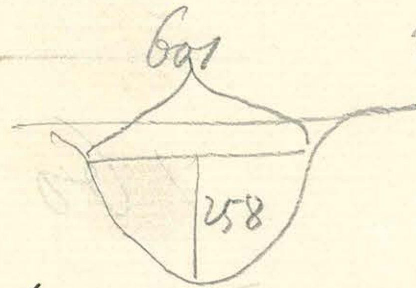
$b = 1,059$



$a = 2,21$

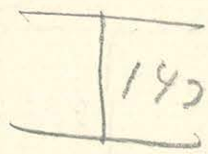
5

300,5



$l = 20,58$
$x = 17,67$
$r = 20,82$
$\lambda = 3,15$

$b = 1,031$

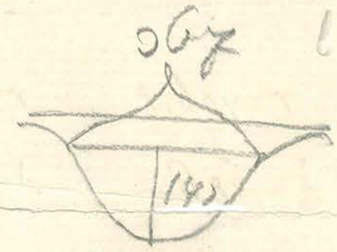


$a = 2,21$

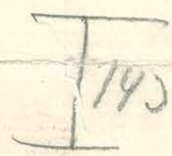
6.

$l = 183,5$

Febr. 20



$l = 12,57$
$x = 9,70$
$r = 12,99$
$\lambda = 3,26$



$b = 1,062$

$a = 2,21$

7 $2l = 249$
$x = 99,5$

$l = 13,17$
$x = 10,53$
$r = 13,50$
$\lambda = 2,97$

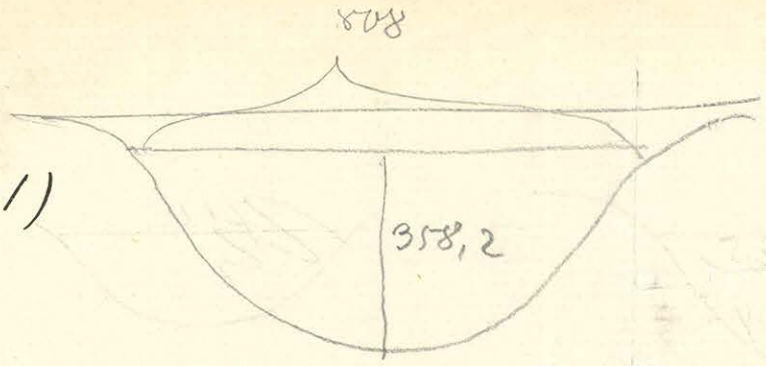
92

lámpával

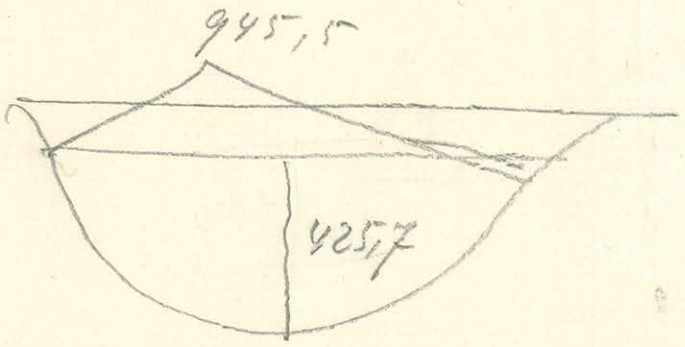
nagyítás = 9,45
$b = 0,987$

Febr. 24

$a = 2,24$



1)



2)

160 . 10,94

$\frac{10,94}{160} = 0,06837\overline{5}$

$= 0,0684$

1) ben $l = 404$ $x = 358,2$ $r = 406,8$ $r = 27,82$ m.m

$\lambda = 4,86$ $\lambda = 3,324$ m.m

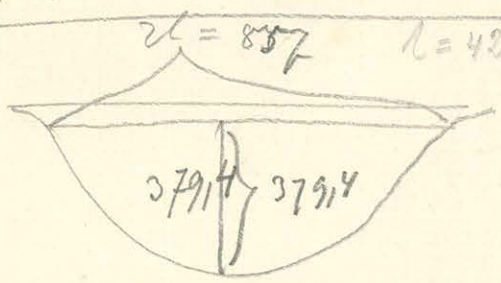
$a = 2,27$

$b = \frac{\lambda}{2a} + 0,205 = 1,037$

2 ben $l = 472,8$ $x = 425,7$ $r = 475,4$ $r = 32,52$ m.m.

$\lambda = 4,97$ $\lambda = 3,3995$ m.m.

$b = 1,053$



2)

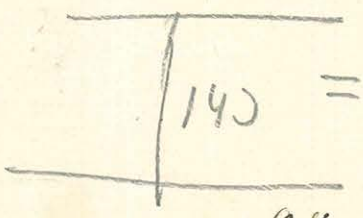
$l = 29,05$

$x = 25,99$

$r = 29,56$

$\lambda = 2,57$

$b = 1,098$



$\frac{9,8}{140} = 0,0685$

$a = 2,21$

Bubrič ... Febr. 26 este.

Kati

Parallaxis

δ 62,40 / 83,84) 21,44

$2l = 49{,}4$

corrigálva $2l = 48{,}7$

$\frac{50}{357}$ Correctio parallaxis miatt.

$50 \cdot \frac{4{,}94}{357} = 0{,}7$

x 83,84 / 62,40) 21,44

$2l = 49{,}4$

corr. 48,7

$l = 24{,}35$ $r = 24{,}55$ $d = 3{,}11$

$\frac{50}{357}$

$a = 2{,}252$

$b = 1{,}005$

91,58 / 62,02) 28,56

Parall.

$\frac{60}{357}$ correctio parallaxis miatt. 1,1

26 / 92,3 / 66,0

corr. 65,2

62,06 / 91,68 2,962

94 / 27,8 / 66,2 / 65,1

29,57

$l = 32{,}6$

$x = 29{,}57$

$r = 32{,}75$

$d = 3{,}18$

$b = 1{,}018$

91,62 / 62,02 / 59,74) 29,60 / 2,28 = a

94 / 27,7 / 66,0 / 65,2

$\frac{\;}{357}$

61,92 / 91,42 29,50

28 / 94,4 / 66,4 / 65,3

28,6 / 95 / 66,4

4 óra 5 ... igen

79,10 / 62) 17,10

46 / 86,6 / 40,6

60,4

$\frac{4{,}5}{357}$ Parallaxis hiba 0,503

5 ó 5 kötő jobb 62,02 / 79,00) 17,28

jobb

5 ó 10 79,30 / 62,06) 17,24

5 ó 15 62 / 79,26) 17,26

5 ó 20 79,26 / 62,8) 17,18

17,27

47 / 87,7 / 40,7

40,7

46,5 / 87,2 / 40,7

corr. 40,2

48,3 / 89 / 40,7

51,5 / 92,2 / 40,7

$2l = 40{,}2$ $l = 20{,}1$

$x = 17{,}27$

$r = 20{,}34$

$d = 3{,}13$

$b = 1{,}012$

új bolond
5 óra 25 felüt jegyzés

61,86) 12,76 50,54) 31,1
74,62 81,5

5 óra 30 74,50) 12,6 31,1
61,9

5ó.35 61,82) 12,70 12,68 31 31,1−0,4
74,52 ~~30,7~~

5ó.40 fehér 52,5) 31,1
74,50) 12,66 80,6
61,84

45 fehér 61,82) 12,70 31,1
74,52

4,57
7
correctio, 0,39

l = 15,35
x = 12,68
r = 15,63
~~λ = 2,78~~
λ = 2,95

b = 0,977
b' = 0,967

5ó.50 új

68,32) 6,74 19
61,58

5ó.55 61,58) 6,94 19 ~~18,24~~
68,52 18,76

6ó fehér 68,48) 6,62 6,84 19
61,86

6ó.5 61,82) 6,98 19
68,80

6ó.10 68,74) 6,96 19
61,80

Correctio 0,24

l = 9,38
x = 6,84
r = 9,85
λ = 3,01

b = 1,000

új kat.

bára 25.

61,26) 4,34
65,60

60,2) 12,6
72,8

bára 20

60,0
73) 12,7

~~61,50~~
~~61,54~~

új

61,42) 4,08
65,50

12,6

65,50) 3,96
61,54

12,6

61,50) 4,04
65,54

4,01

12,6

65,54) 4,00
61,54

12,6

61,54) 3,98
65,52

12,6

Corrigálva

12,44

Correctio parallaxis miatt.

0,16

$l = 6,22$

$x = 4,01$

$r = 6,83$

$\lambda = 2,82$

$b = 0,971$

$b' = \frac{\lambda}{2u} + 0,205\frac{r}{u} = 0,962$

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1) $x = 103$ / $u = 249$ } $\frac{10,94}{82}$ $a = 2,25$.

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2) $x = 42$ / $u = 122,5$ } $\frac{10,94}{87,5}$) $r = 8,82$ / $x = 5,65$ / $l = 8,20$ $\lambda = 3,17$. $a = 2,25$ $b = \frac{\lambda}{2a} + 0,305 + \frac{1}{3}\frac{a}{u} = 1,040$ (0,030)

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3) $x = 98,5$ / $u = 234$ } $\frac{10,94}{69}$ $a = 2,25$ $\frac{10,94}{69} = 0,159$ ~~$x = 10,9$~~ ~~$l = 12,35$~~ 12,35 ~~$r = 13,54$~~ ~~$\lambda = 2,31$~~

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4) ~~$x = 175,4$~~ / ~~$u = 394,6$~~ ~~$\frac{10,94}{69}$~~ ~~$r = 31,708$?~~ / ~~$x = 27,666$~~ ~~$a = 2,25$~~ ~~$x = 18,80$~~ / ~~$l = 22,4$~~ $x = 27,89$ / $l = 31,37$ | $r = 31,54$ / $\lambda = 3,65$

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5) $x = 28,5$ / $u = 87,5$ } $\frac{10,94}{69}$ $a = 2,25$

6

7

8

9

Kit mérés $\mathcal{U} = 400,5$ $l = 21,49$ Febr. 24 d.u.

$x = 175$ | 92 $x = 18,64$ $a = 2,24$

$r = 21,71$ $b = \frac{\lambda}{2a} + 0,005 + \frac{1}{9}\frac{a}{u} = 1,001$ (0,990)

$\lambda = 3,07$

$\mathcal{U} = 298$ $l = 15,76$ Nagyítás 9,455

$x = 122$ $x = 12,91$ $\lambda = 3,27$ $b = 1,037$ $a = 2,24$

$r = 16,12$

$\mathcal{U} = 210$ $l =$ ~~[illegible]~~ $= 11,27$ $\frac{378,2}{40} = 9,455$ $a = 2,24$

$x = 87,5$ $x = 8,60$ $\lambda = 3,06$

$r = 11,66$ $b = 0,988 + 0,029 = 1,017$

$\mathcal{U} = 141,5$ $b = 7,49$

$x = 48$ $x = 5,08$ Nagyítás mint fent

$r = 8,06$ $\lambda = 2,98$ $b = 0,970 + 0,033 = 1,003$ $a = 2,24$

$\mathcal{U} = 440,5$ $l = 23,30$

$x = 193$ $x = 20,42$ nagyítás mint fent. $a = 2,24$

$r = 23,50$ | $\lambda = 3,08$ $b = 0,993 + 0,011 = 1,004$

Légnyomás 4 30

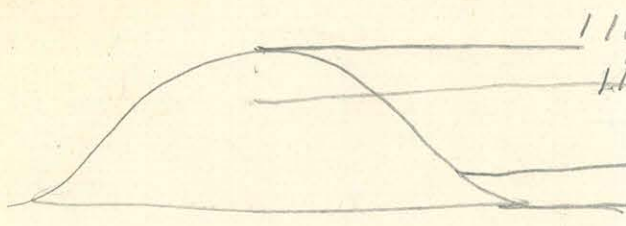
vízé 9,80

$\frac{\lambda}{2a} + c = 1$

$\lambda + 2ac = 2a$

$a = \frac{\lambda}{2(1-c)}$ 695 / 138

138 | 310 | 2,256
276
340
276
780
690
800

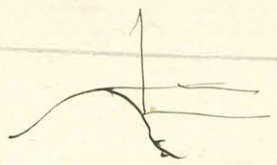


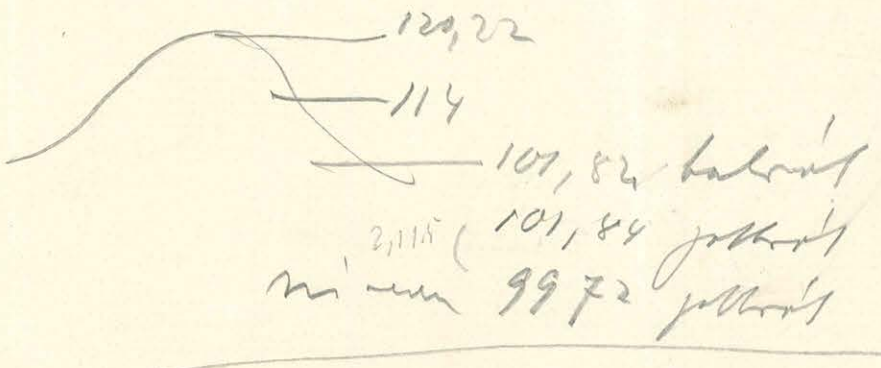
$r = \frac{k\sqrt{2}}{\sqrt{2}-1}$ = $r = 3,413\,k$

$r = 20,82$

$x = 18,02$

$\Delta\ 2,80$

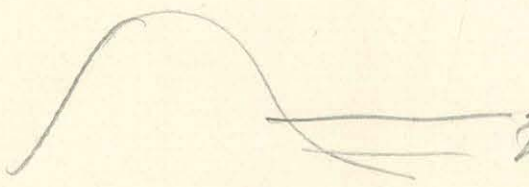




$r = 21,23$

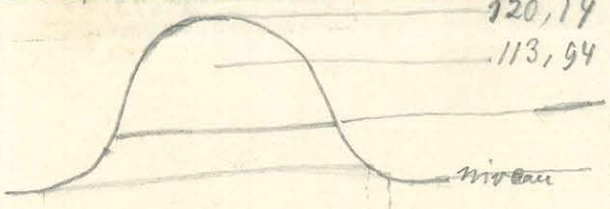
$x = 18,39$

$\Delta = 2,84$



elpattant.

Közben az oldat filtrálva.

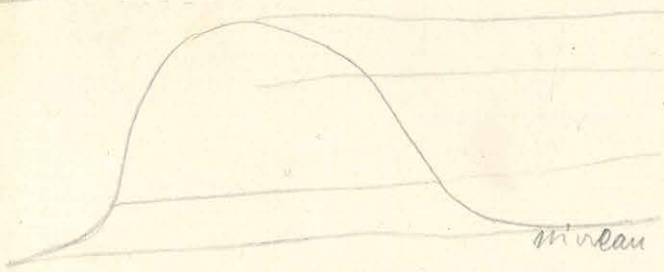


miffra.
120,14
113,94
101,94 balról.
elpattant.

$r = 21,16$

$18,20$

$2,96$



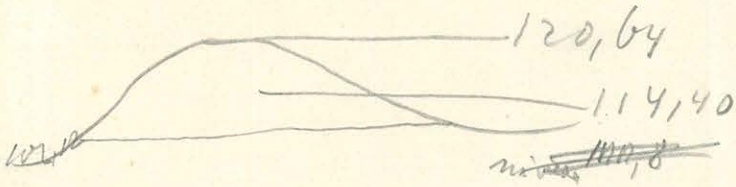
miffra.
119,30
113,24
elpattant.

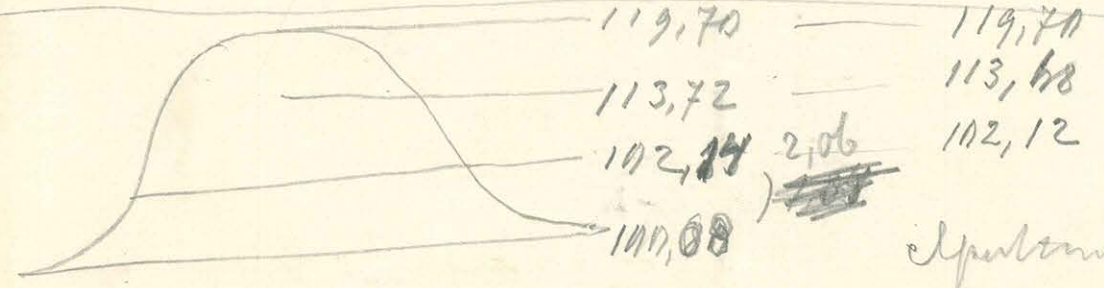
$r = 20,68$

$x = 17,72$

$2,96$

r





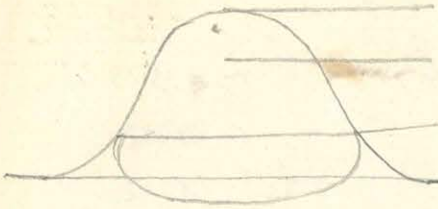
119,70
113,68
102,12
elpattant

$r = 20,48$

$x = 17,54$

$2,94$

új oldat.



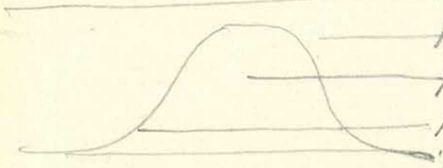
118,12 } 5,54) 10,48

112,58

102,10 } 2,0 balról

100,10

r = 18,81
x = 16,02
2,79



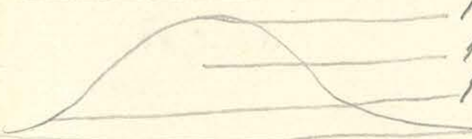
121,14) 6,60

114,54) 12,60

101,94) 2,04 bal.

99,90

r = 22,53
19,20
3,33 ?



120,06) 6,20

113,86) 11,92

101,94) 2,04

99,90

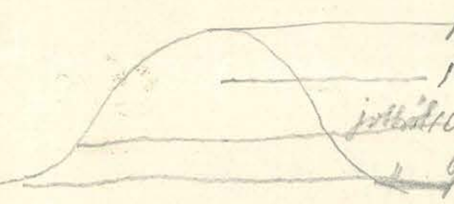
bal

r = 21,16
18,12
3,04

101,66) 2,0 elpattant

99,66

Okt. h-án d. e. 11 óra



119,82) 6,32

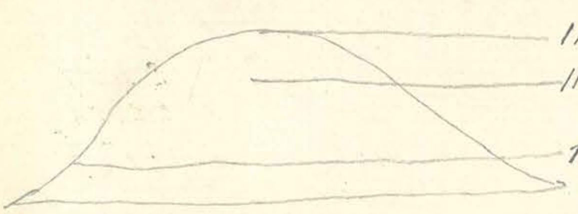
113,50) 18,34

jobbról 101,48) 2,16

99,32 — 99,32 balról

elpattant

r = 21,57
x = 18,34
3,23



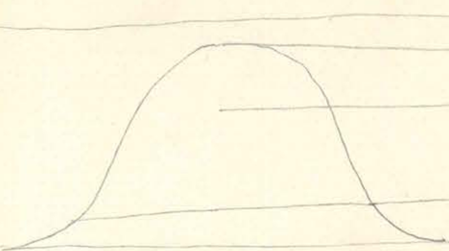
118,10 } 5,90 — 118,08

112,20 } 16,70

101,40 — elpattant

99,30 balról) 2,10

r = 20,14
16,70
3,44



122,86 } 7,22

115,64 } 21,92

*101,44 } 2,16

99,28 balról

122,84 } 7,24 csík foszladozott

115,60 } 21,40

101,46 balról } 2,16 — 101,48 jobbról

99,30 balról

újra. 122,84 } 7,22 csík nagyon foszladozott

115,62 Csík roppant sőt foszladozott sőt

r = 24,64
21,42
3,22

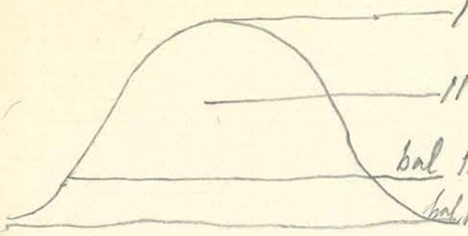
2,08 { 101,30 balról — 101,30 jobbról

99,22 "

Határvonal is foszladozott jobbról is, balról is

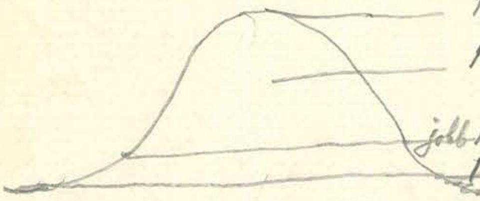
Új oldat.

$r = 21,91$
$x = 18,82$
$t = 3,09$



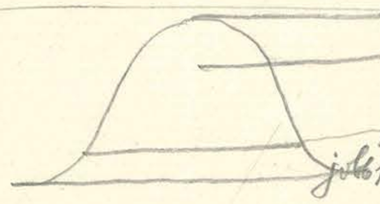
121,18
114,76) 6,42
bal 102,36) 18,82 — jobb 102,42
bal 100,30) 2,06 — jobb 100,30) 2,12 elpattant

$r = 24,09$
$x = 20,74$
3,35

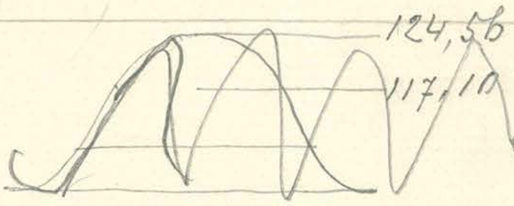


123,10
116,04) 7,06
) 20,74
jobb 102,36
100,26) 2,10 elpattant.

$r = 19,04$
$x = 16,03$
3,01

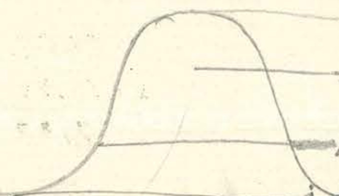


118,08
112,50) 5,58
) 16,03
102,05
jobb 100,02) 2,03 — elpattant.



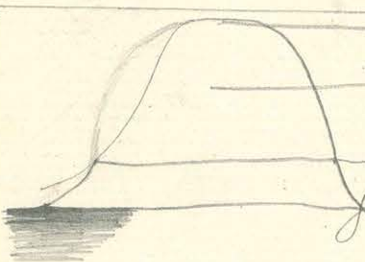
124,56
117,10) 7,46
elpattant

26,70
23,48
3,22



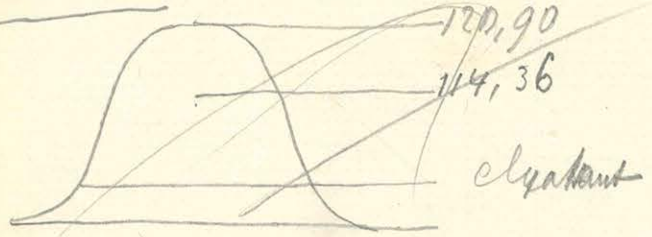
125,50
117,68) 7,82
) 23,48 elpattant
102,02
jobb 99,88) 2,14 ~~marad jobb~~ 102,03 / 99,88) 2,15

23,67
20,58
3,09

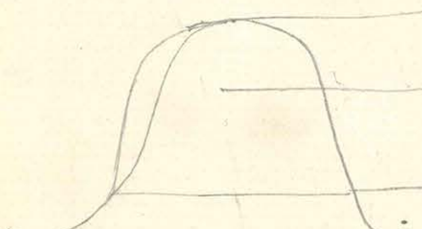


122,46
115,52) 6,94 — 122,52 / 115,54) 6,98 nem pattant el
20,50 — 20,58
101,96 — 101,94
jobb 99,82) 2,14 — marad jobb 99,82) 2,12

Délután 5 óra



120,90
114,36
elpattant



118,84 — 118,84
112,88) 5,96 — 112,88) 5,96
) 17,26
101,58 elpattant.
jobb 99,54) 2,04

Február 27. délután a régi szappanoldat.
Eshi frappanoldat.

429

430

433

429

427

k. é. 429,6

27 délután

Február 27 délelőtt.

Régi szappanoldat.

428
428
428
432
428
431
429
427
425
427

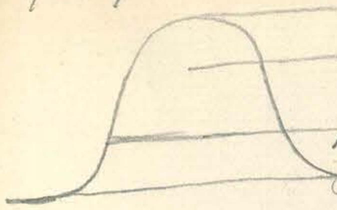
Középérték 428,3

Uj (világos) szappanoldat.

444
439
440
442
442

k. é. 441,4

Febr. 7. d.e. ½10 Bukovék

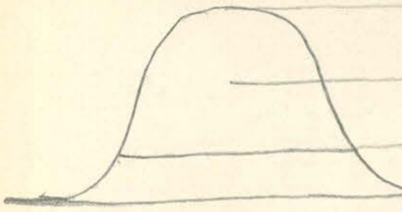


123,34) 7,0
116,34) 20,76
jobb 102,58) 2,12
jobb 100,46

123,40) 7,04
116,36) 20,81
jobb 102,59) 2,12
jobb 100,47

7,02
20,78
balról ugyanaz.
Elpattantattott

r = 23,96
x = 20,78
3,18

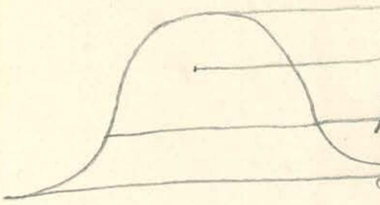


127,00) 8,08
118,92) 24,52
jobb 102,48) 2,16
jobb 100,32

127,01) 8,07
118,94) 24,52
bal 102,49) 2,17
jobb 100,32

8,08

r = 27,58
24,52
3,06

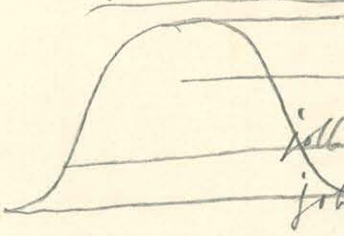


118,70) 5,66
113,04) 16,40
jobb 102,30) 2,0
jobb 100,30

118,70) 5,70
113,00) 16,36
bal 102,34) 2,04
jobb 100,30

r = 19,39
16,38
3,01

Febr. 7. délután 6 óra.



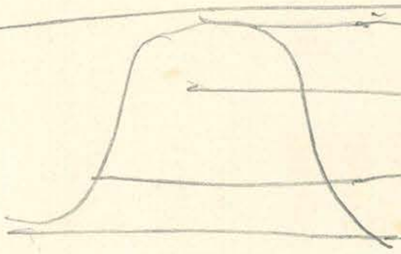
122,72) 7,04
115,68) 21,04
jobb 101,68) 2,06
jobb 99,62

122,74) 7,08
115,66) 21,00
bal 101,74) 2,12
jobb 99,62

122,74) 21,04
jobb 101,70) 2,08

7,06 r = 24,10
21,02
3,08

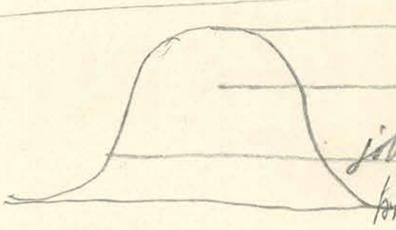
Elpattantva.



132,40
122,54) 9,86
balról 101,62) 30,78
balról 99,46) 2,16

jobbról 101,58) 2,12
bal 99,46

33,66
30,78
2,88



122,41) 6,99
115,42) 20,91 ugyanaz balról
jobbról 101,50) 2,05
balról 99,45

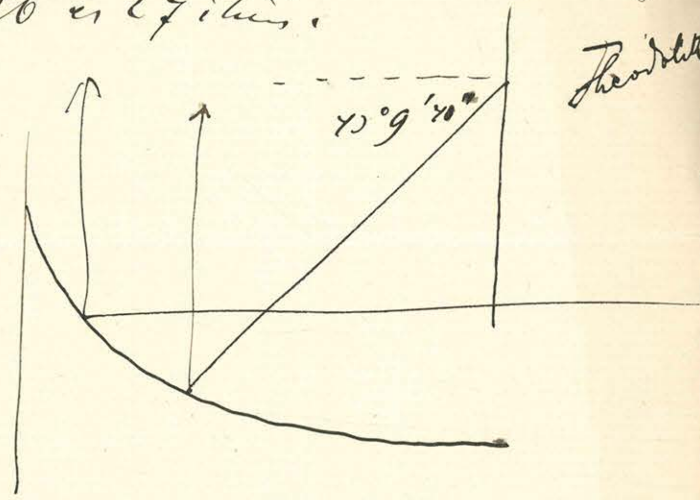
122,42) 6,92
115,50) 20,92
101,50) 2,05
99,45

6,96 r = 23,75
x = 20,91
2,84

Szappanoldat 25-én este.

Szögletek a nagyon oldatokkal 26 és 27-ikén.

Mint előre!



224/164) 440

227/165) 438

228/165) 437

224/163) 439

224/162) 438

230/160) 436

226/162) 436

223/164) 437

224/163) 439

226/163) 437

437,7

log N = 0,5914870

N = 0,39038

x − x' = 875,4

a = 2,243

430

a = 2,213

A Sugnap lemért értékei:

9,78
9,84
9,82

Február 27. délelőtt [illegible] [illegible]

Új szappanle Új szappanoldat Febr. 26.

Csak szappanoldat; a = 2,261

63,66) 15,94
79,60

36) 37,7
73,7
) 37,25

79,60) 16,00
63,60

35) 37,7
72,7

javult corr. 0,45

4,5 / 375

l = 18,62
x = 15,98
r = 18,84
λ = 2,86
b = 0,952

77,14) 13,40
63,74

39,5) 32,8
72,3
32,37

l = 16,18
x = 13,40
r = 16,48
λ = 3,08

5 / 375 0,43

b = 1,002

~~63,74~~

79,40 15,86
63,54

35,5) 37,5 = 37
73

~~l=18,5~~
l = 18,5
x = 15,86
r = 18,72
λ = 2,86

5,5 / 375 corr. 0,55

b = 0,952

63,28) 17,52
80,80

31) 40,6
71,6
40,06

l = 20,03
x = 17,52
r = 20,21
λ = 2,69

5 / 375 corr. 0,54

b = 0,913

~~80,80~~

85,32) 22,08
63,24
) 22,19
63,24) 22,30
85,54

29) 50,1
79,1
) 50,15 corr. 49,35
29,4) 50,2
79,6

l = 24,67
x = 22,19
r = 24,81
λ = 2,62

6 / 375

corr. 0,80

b = 0,894

70,12) 7,14
62,98

41) 19,6
60,4

5,5 / 375

62,98) 7,24
70,22
) 7,15
70,24) 7,28
62,96

41) 19,5
60,5
19,5 Corr. 19,24
41
60,5) 19,5

l = 9,62
x = 7,15
r = 10,04
λ = 2,89

b = 0,970

5 / 375 Corr. 0,26

62,96) 7,28
70,24

41
60,5 19,5

70,24) 7,30
62,94

41 / 60,5 19,5

77,06) 13,96 28,4) 33,6
63,10 62

5,5
27,5
Cor. 0,50

63,10 14,02 27,4) 33,6
77,12 61

77,12 13,98 14,04 27,7) 33,7 33,66 Corr. 33,16
63,14 61,4

63,14 14,16 28) 33,7
77,13 61,7

77,13 14,10 27,5) 33,7
63,2 61,2

$l = 16,58$
$x = 14,04$
$r = 16,81$
$\lambda = 2,77$
$b = 0,933$

63,20 13,26 30) 32,5
76,46 62,5

5,5
27,5
0,47

76,46 13,26 30) 32,4
63,20 62,4

63,20 13,38 13,36 29,5) 32,5 32,45 corr. 31,98
76,58 62

76,58 13,44 29,5) 32,4
63,14 61,9

63,14) 13,44 29,5 32,4
76,58 61,9

$l = 15,99$
$x = 13,36$
$r = 16,15$
$\lambda = 2,79$
$b = 0,938$

66,96
62,76) 4,20

44,7
57,5) 12,8

6
575

62,76
66,98) 4,22

44,8
57,7) 12,9

12,9
corr.
12,7

l = 6,35
x = 4,22
r = 6,89
d = 2,67
b = 0,955

corr.
0,20

66,98
62,76) 4,22

44,9
57,8) 12,9

62,76
66,98) 4,22

44,9
57,8) 12,9

vég nagyamoldat.

6
575

62,08
77,26) 14,88

39,5
75,2) 35,7

a = 2,194

Corr. 0,58

77,26
62,32) 14,97

40,0
76) 35,7

62,32
77,24) 14,92

75
39,0) 35,7

14,9

35,7
corr.
35,12

l = 17,56
x = 14,90
r = 17,79
d = 2,89
b = 0,978

77,24
62,36) 14,88

75
39,0) 35,7

62,36
77,22) 14,86

75
39,2) 35,8

72,32
62,22) 10,10

49
74,8) 25,8

62,22
72,40) 10,18

48,7
74,6) 25,9

72,40
62,24) 10,16

49
74,9) 25,9

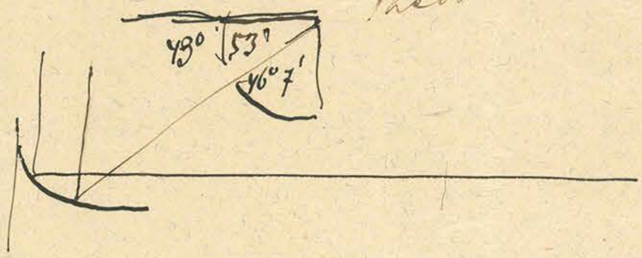
62,24	) 10,08	) 10,13	~~48,8~~ 74,7	) 25,9	) 25,9	
72,06						
72,06	10,14		75	) 25,9	Corr. 25,48	
62,22			49,1			

$\frac{6}{075}$

Corr. = 0,42

$l = 12,74$
$x = 10,13$
$r = 13,07$
$\lambda = 2,94$
$b = 0,994$

Szappan-oldat.



x - x'

e	56 / 10) 204 + I	e 50 / 8) 208
	15 / 64) 201	10 / 63) 197
e	58 / 8) 200	e 53 / 8) 205
	17 / 68) 199	11 / 59) 202
e	56 / 9) 203	e 49 / 5) 206
	15 / 64) 201	13 / 60) 203
e	57 / 7) 204	e 50 / 7) 207
	17 / 60) 203	11 / 57) 204
e	52 / 7) 205	e 50 / 10) 210
	15 / 65) 200	

Nyomás után 16 / h 60

e) 58 / 11) 203

106° 26½') 316° 26 ') || 180° 19' / 0° 17½'

Szögek 479 79 / 96 26 / 4 3 53

309° 78 / 26

204,2

Közép a 10 előre-ből 454,2

Közép a 10 hátrától 451,0

$$a = \frac{x - x'}{\sqrt{2}\left(\cos\frac{\varphi}{2} - \cos\frac{\varphi'}{2} + 1{,}1513 \lg \frac{\operatorname{tg}\frac{\varphi}{4}}{\operatorname{tg}\frac{\varphi'}{4}}\right)}$$

$$a = \frac{x - x'}{\sqrt{2}\left(\cos\frac{\varphi}{2} - \cos\frac{\varphi'}{2} + 1{,}1513 \lg \frac{\operatorname{tg}\frac{\varphi}{4}}{\operatorname{tg}\frac{\varphi'}{4}}\right)}$$

~~log N = 0,635299 - 1~~
~~N = 0,43181~~
~~a = x - x' = 0,9084~~ (454,2)
~~a = 2,1027~~

log N = 0,6023043 - 1
N = 0,40023
x - x' = 0,9084
a = 2,270

Czigi Mártoni

1883

Egyes anyagok állandói

Éther = 0 nak megfelelő hőmérséklet és arnál α

$121 \mid 1,9860 \mid 17$
$1\,21$
776

	0	$\frac{\alpha}{\alpha_e}$	$\frac{T}{T_{eth.}}$
Éther			
Víz			

<u>Éther.</u>

$\alpha_{2,5} = 1,9561$
$\alpha_{19,8} = 1,7452$
$\alpha_{39,3} = 1,5102$

) ezekből ~~$\frac{d\alpha}{dt}$~~

$\frac{\alpha_{19,8} - \alpha_{2,5}}{17,3} = 0,0122$

$\frac{\alpha_{19,8} - \alpha_{39,3}}{19,5} = 0,0120$

$\frac{\alpha_{2,5} - \alpha_{39,3}}{36,8} = 0,0121$

$\alpha_0 = 1,986$ $\alpha = 1,986 - 0,0121\,t$

$a^2_{2,5} = 5,331$
$a^2_{19,8} = 4,885$
$a^2_{39,3} = 4,373$

$\frac{a^2_{2,5} - a^2_{19,8}}{17,3} = 0,0258$

$\frac{a^2_{19,8} - a^2_{39,3}}{19,5} = 0,0262$

$\frac{a^2_{2,5} - a^2_{39,3}}{36,8} = 0,0260$

$a_0^2 = 5,396$ $a^2 = 5,396 - 0,0260\,t$

$a^2 = 5,396(1 - 0,0048\,t)$

Víz re nézve $\alpha_0 = 7,688$

$\alpha_{40,4}$ és $\alpha_{74,6}$ kiszámítva

$\alpha = 7,688 - 0,0136\,t - 0,000035\,t^2$

$a_0^2 = 15,401$

e szerint a kritikus hőmérséklet $\alpha = 0$ nál $t = 320$

$a^2 = 15,401 - 0,02742\,t - 0,000013\,t^2$

$a^2 = 15,401(1 - 0,00178\,t - 0,00000084\,t^2)$

~~0,0000000~~ $0,00000084\,t^2$

Ha ϑ a hőfok Celsius ban a kritikus hőfoktól 410 celsius fokig számítva akkor $t = 410$ re $\vartheta = 0$ ra $\alpha = 0$ és a táblázat értékeknek megfelelőleg

$$\alpha = 0,01373334\,7\,\vartheta + 0,0000356063\,9\,\vartheta^2 - 0,000000005668$$

17004

~~$\frac{d\alpha}{d\vartheta} = 0,0000356060$~~

$$\frac{d\alpha}{d\vartheta} = 0,01373334\,7 + 0,0000712127\,8\,\vartheta - 0,00000001700$$

17

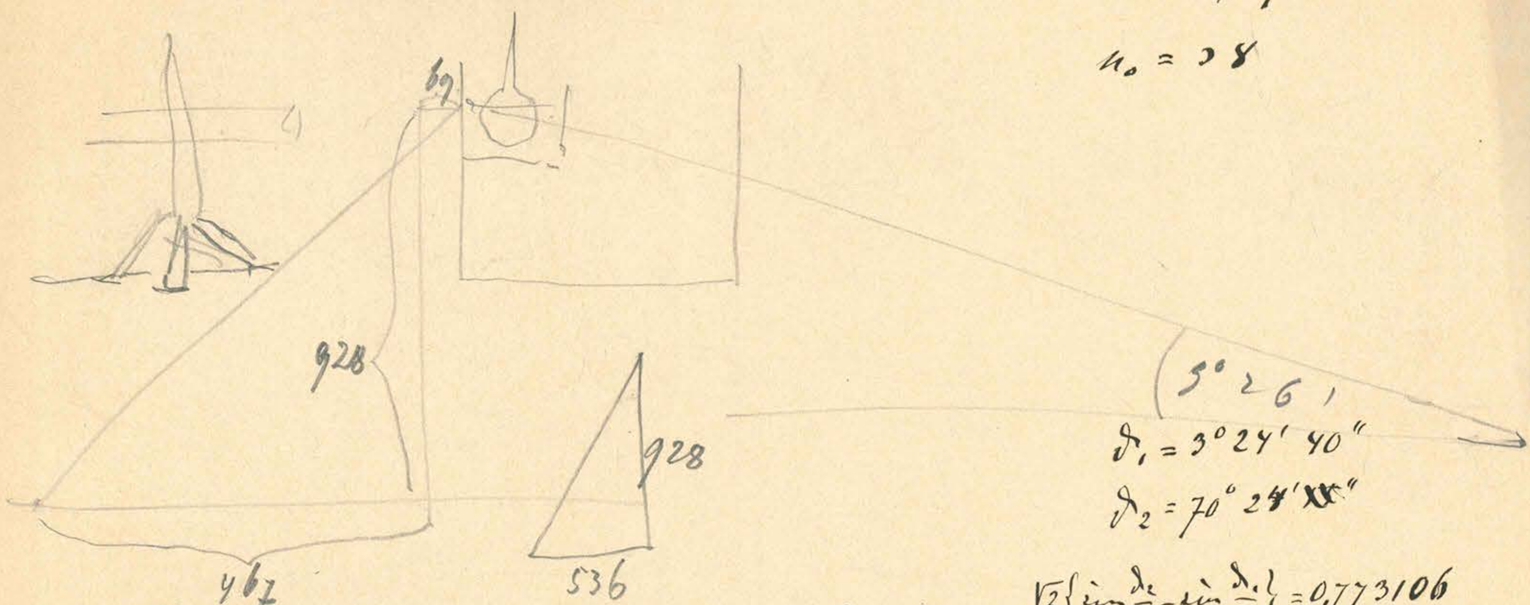
csakhogy $\frac{d\alpha}{d\vartheta}$ nak maximuma van $\vartheta = 210$ nél még $\left(\frac{d\alpha}{d\vartheta}\right)_{max} = 0,02$

E képletből $\vartheta = 400$ ra vagyis $10°$ Celsiusra találjuk $\frac{d\alpha}{d\vartheta} = 0,0199$

Aether alcohollban

$n = 1{,}37$

$n_0 = 38$



$\vartheta_1 = 3^\circ 24' 40''$

$\vartheta_2 = 70^\circ 24'$ ~~xx~~$''$

$\sqrt{2}\left\{\sin\frac{\vartheta_2}{2} - \sin\frac{\vartheta_1}{2}\right\} = 0{,}773106$

$\left\{\frac{1-\cos^3\frac{\vartheta_1}{2}}{\sin\frac{\vartheta_1}{2}} - \frac{1-\sin^3\frac{\vartheta_1}{2}}{\sin\frac{\vartheta_2}{2}}\right\} = 0{,}743628$

2,5°

364,5
364,0
363,5
364,5
364,0
364,5
364,0
363,5
363,5
363,0

} 363,95

$a = 2{,}309$

$a^2 = 5{,}331$

$s = 0{,}73380$

$\alpha = 1{,}9561$

19,6°

375

} **19,8°**

20°

348
349
348
348
347
349
348
348,5
347
349

} 348,15

$a = 2{,}210$

$a^2 = 4{,}885$

$s = 0{,}71450$

$\alpha = 1{,}7452$

39,5°

} 39°3

39°1

330
329
329
328
329
328
329,5
329
330
329,5

} 329,05

2,091

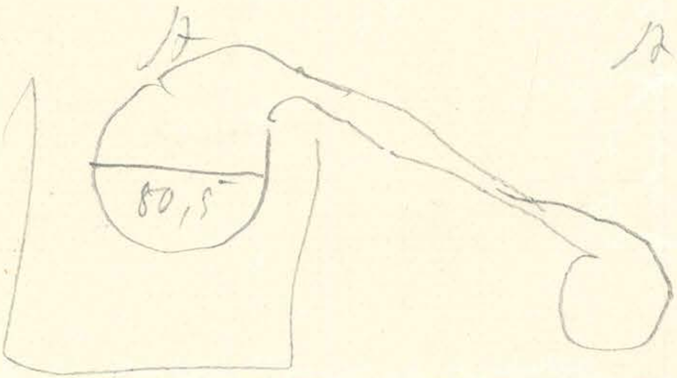
$a^2 = 4{,}373$

$s = 0{,}69071$

$\alpha = 1{,}5102$

Kisér letek 1883 Julius 15ikén

Hevesen golyó mérete
Vörös hát átmérője 77,5 m. m.
kisebb golyó átmérője 80,5 m. m.
Vörös hegy átmérője 79 m. m.



A hőmérsék let 20 fok

B levegőben

565
565,5
565
565

B jeges vízbe téve

565,5
565
565

11 óra 33 perckor 6.3

B be 0 C

565
566
565,5

I. 265 5' 9" 15 mm.

II. 271 5' 9" 1 mm

Szeptember 28 d. u. 2 óra 30' a ... 1,5 milliméterrel emelkedett

előre	93, 18) 125	18, 89) 129
	90) 72	16) 73
	20) 130	88) 128
	88, 14) 126	85) 71,5
	87) 73	13,5
		87,5) 126

A ... optikai tengelye a geometriaitól eltér 44 perccel, ennek megfelelő correctió δ_1-re nézve adja

$$\delta_1 = 3^{\circ}57'$$

a többi szintén ugyanis

$$\delta_2 = 22^{\circ}26'$$

$$\delta_3 = 33^{\circ}36'$$

Így aztán a kijavított értékek

$N_{12} =$ ~~[illegible]~~ 0,23795

$N_{23} = 0,14068$

Szept. 26 ikrám d. e. 11 óra ~~45~~

a Bavi legnagyobb fogva 2 millimeterrel lejebb mulat

10) 124	Széle 80) 70
34) 72	10) 72
6) 72	38) 72
	12) 126
11) 125	Széle 75) 68
26) 73 mi kell nagy.	7) 194
9	19
Széle 76) 67	
17,5) 125,5	10) 70,5
29) 71	29,5
10	16) 123
18) 125	11) 73
42) 72,5	28) 125
15,5	12
18) 124	14) 73
42) 69	41) 124
11	17
20) 122	
42) 74	
16	
~~Széle 61) 90~~	

Közép a 10 észlelésből

$1,2 = 124,35 = 0,62175$

$2,3 = 71,8 = 0,359$

$a_{12} = 2,571$

$a_{23} = 2,572$

Az emelkedési szöghez

$\frac{z'-2}{a\sqrt{2}(1+0,305\frac{a}{n})} = \sin\frac{\vartheta'}{2} - \sin\frac{\vartheta}{2}$

formula alapján számítva téve $\vartheta = 90°$

$z'-2 = 0,35$ $a = 2,57$ adja

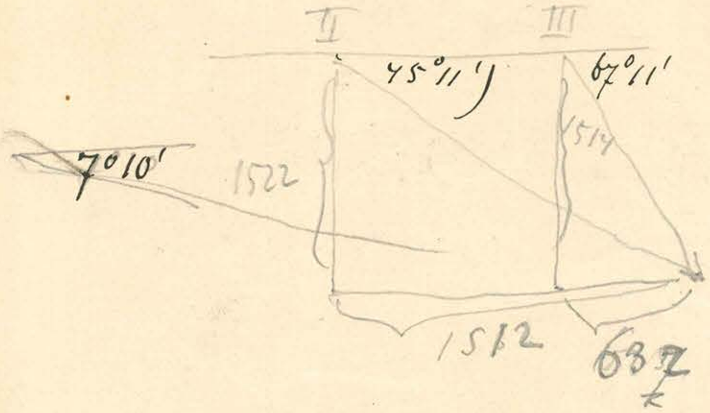
$\vartheta = 44°44'$ lesz

Az emelkedési szöge 134°44'

Szept. 27. délben 12 órakor. ~~legnagyobb~~ Bavi a legnagyobb állásán a széle csik ot kül az ablak reflexiójával ... lelve

Széle ~~80~~	84) 126	S. 78) 100	84) 126	81) 102
2	10) 70	78) 71	10) 70,5	79) 72
2	80) 101	7) 126	80,5) 104,5	7) 127
10	S. 81	81	85	80
83) 126	84) 104	85) 125	83) 104	
9) 71,5	79) 71	10) 72	75) 71	
80,5) 106,5	8) 126	82) 104	8) 122,5	
87	82	86	85,5	
~~85~~ 88) 127	81) 94			
15) 71	83) 71			
86) 98	12) 125			
84	87			

Sept 24 új szögmérés



$\vartheta_1 = 3°35'$

$\vartheta_2 = 22°26'$

$\vartheta_3 = 33°26'$

$N_{12} = 0{,}24763$

$N_{23} = 0{,}13958$

Sept. 24 ~~[illegible]~~ A Baro legnagyobb [illegible] [illegible] [illegible]

d. e. 12630 mm.

20) 127
47) 74,5
21,5) 80,5
Szék 2,

Szék h.
0) 80
20) 74
46) 74
12) 134

Délután 3 óra 45 a

31) 130
61) 73
34) 73
8, 5) 71

S 10) 76
34) 75
59) 75
29) 130

September 25 d. u. 12h. 15

62) 130
92) 73
65) 73
34) 79

37) 79
68) 75
53) 129
64

67) 129
96) 75
71) 75
48) 71

48
70) 78
70) 73
97) 73
68) 129

Ahol a 6 és [illegible] [illegible]

$1{,}2 = 129{,}5 = 0{,}6475$ mm

$2{,}3 = 74 = 0{,}37$ mm

$a_{12} = 2{,}615$

$a_{23} = 2{,}654$

[illegible]: de [illegible].

Vörös üveg golyók átmérői a külső üveg felületén mérve:

vörös [illegible] 82,2

Vörös [illegible] ~~77~~

[illegible] ~~80,5~~

vörös [illegible] I, II ~~[illegible]~~ 78,5

Sept. 21. | Középső csík a fonalkereszten állott

d.e. 9ó 20m

e	h
78 / 4) 126	74) 74 / 0
76) 72	72) 128
72 / 98) 126	68 / 95,5) 72,5
70) 72	70,5) 125

A legalsó (valóságban legfelső) csík a fonalkereszten maradt.

Sept. 22. d.e. 8ó 30m. | Az alsó csík (a valóságban) 55 osztályrésszel alászállt.

e	h
22,5 / 47) 124,5	12,5 / 37) 75,5
18,5) 71,5	11) 126
12,5 / 37,5) 125	15,5 / 41) 74,5
13,5) 76	15,5) 125,5

Az alsó csík a fonalkereszten maradt.

Sept. 23. d.e. 7ó. alsó csík valóságban emelkedése 65 osztályrésznél nagyobb.

d.e. 12óra 50

35 / 65) 70	38 / 67) 129	14) 74
35) 130	41) 74	40 / 67) 73
	kiv. m. 81) 80	37) 129

[illegible] a [illegible] alsó csíkon

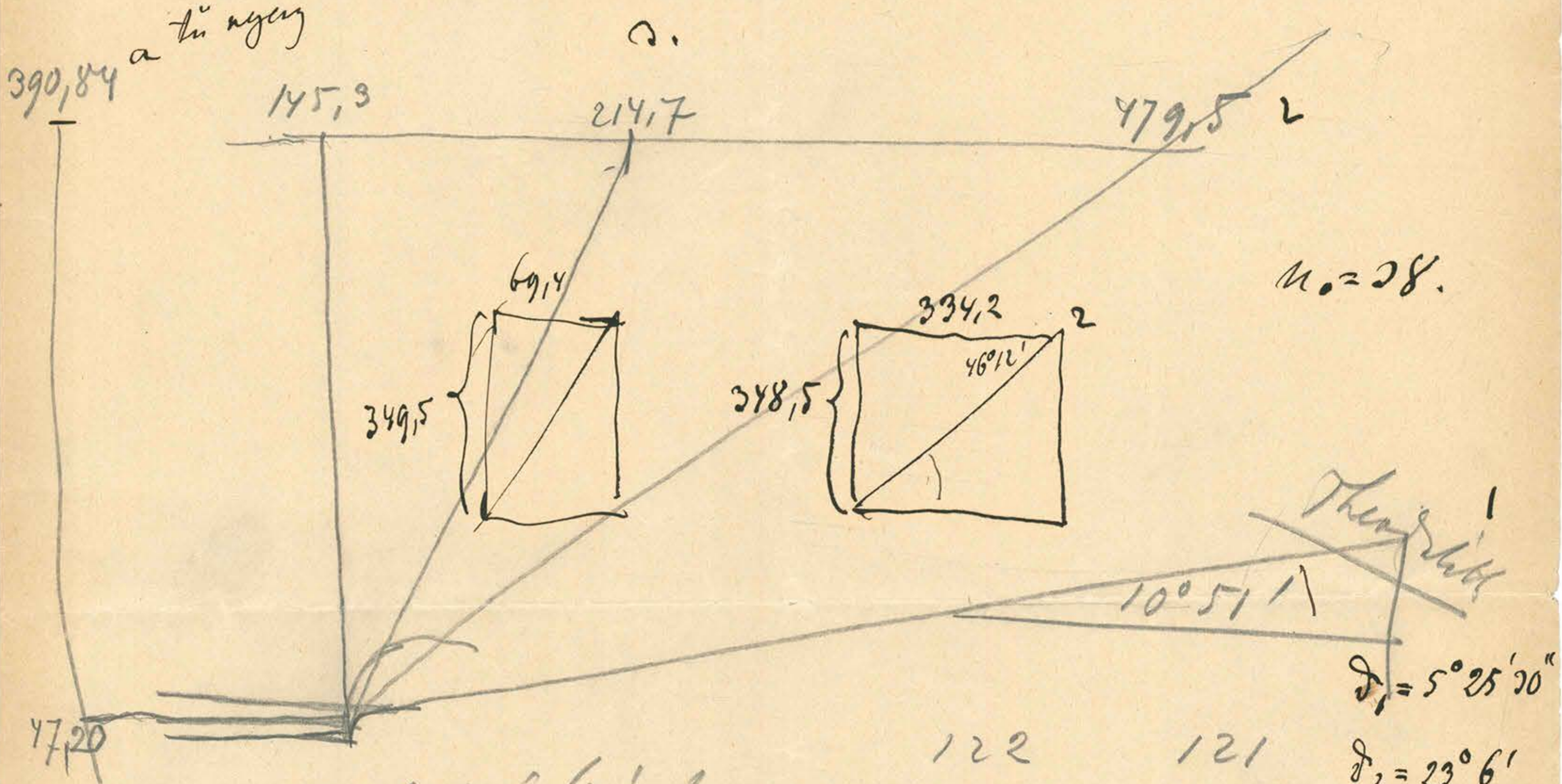
A 24 és 25-ből középérték

$126,66 = 0,6333$ | $a_{12} = 2,615$

$73,75 = 0,36875$ | $a_{23} = 2,620$

Ungvár március 20 1885

12 óra $\frac{3}{4}$ kor.	49, 52 }97; 52, 30 }122	33, 55 }122; 55, 52 }97	48, 57 }97; 57, 28 }123
d. u. 5 órakor	122 / 97 / 121,5 / 98	121,5 / 97 / 97 / 122	121 / 97



$n_0 = 28.$

$\delta_1 = 5°25'30''$

$\delta_2 = 23°6'$

$\delta_3 = 39°23'$

délután 6 $\frac{1}{4}$ kor. 122 / 97 121 / 97

$$a = \frac{z_2 - z_1}{\sqrt{2}\left\{\sin\frac{\delta_2}{2} - \sin\frac{\delta_1}{2}\right\} + \frac{a}{340}\left\{\frac{1-\cos^2\frac{\delta_2}{2}}{\sin\frac{\delta_2}{2}} - \frac{1-\cos^2\frac{\delta_1}{2}}{\sin\frac{\delta_1}{2}}\right\}}$$

$z_2 - z_1 = 0,61$

$z_3 - z_2 = 0,485$

$\sqrt{2}\left\{\sin\frac{\delta_2}{2} - \sin\frac{\delta_1}{2}\right\} = 0,216231$

$(a_{21})_{durva} = 2,8211$

$\sqrt{2}\left\{\sin\frac{\delta_3}{2} - \sin\frac{\delta_2}{2}\right\} = 0,19337$

$(a_{32})_{durva} = 2,5081$

márc 20 ikán d. e. 11 órakor

117 }
118 } 117,5

megvágja a víz a tetejét.

121 11óra 30

erősen elektromos 125

12 óra 123,5

márc 21 ikén 117,5

~~σ a folyadék~~ specifikus volumenje.

~~$p = w +$~~ $p = w - \alpha \frac{\sigma}{\varrho - \sigma} \frac{2}{r}$ σ a gőz sűrűsége ϱ a folyadék sűrűsége

~~$dQ = X dt$~~ $dQ = X dp + Y dt.$

$$\kappa\left(\frac{dX}{dt} - \frac{dY}{dp}\right) = -\frac{\partial v}{dt}$$

$$\frac{\partial X}{dt} - \frac{\partial Y}{dp} = \frac{1}{T} X \qquad \frac{k}{T} X = -\frac{dv}{dt}$$

$$X = \left(\frac{dQ}{dp}\right)_{t = \text{Const.}} \qquad dp = +\alpha \frac{\sigma}{\varrho - \sigma} \frac{2}{r^2} dr$$

$$\frac{dQ}{dr} \cdot \frac{dr}{dp}$$

$$\frac{1}{\alpha} \frac{\varrho - \sigma}{\sigma} \cdot \frac{r^2}{2} \cdot \frac{dQ}{dr} = X \qquad 2\pi r \frac{\alpha}{k}$$

$$Y = \left(\frac{dQ}{dt}\right)_{p = C.} \qquad \frac{dQ}{dr}. \qquad \frac{dv}{dt}$$

$$\frac{4}{3}\pi r^3 \varrho \qquad -4\pi r^2 \varrho \, dr \, l$$

$$\frac{k}{T\alpha} \frac{\varrho - \sigma}{\sigma} \frac{r^4}{2} \varrho l = X \qquad -4\pi r^2 \varrho l$$

$$\frac{dw}{dt}$$

$$v = \frac{4}{3}\pi r^3 \varrho \frac{1}{\varrho} + \left(1 - \frac{4}{3}\pi r^3 \varrho\right) \frac{1}{\sigma} \qquad \frac{4}{3}\pi r^3 \varrho$$

$$= \frac{1}{\sigma} - \frac{4}{3}\pi r^3 \varrho \left(\frac{1}{\sigma} - 1\right)$$

$$p = w - a^2 \frac{\sigma}{r} \qquad X = -\frac{1}{\alpha} \frac{\varrho - \sigma}{\sigma} 2\pi r^4 \varrho l$$

$$dp = +\frac{a^2 \sigma}{r^2} dr$$

$$X = \frac{dQ}{dr} \cdot \frac{dr}{dp} = \frac{r^2}{a^2 \sigma} \cdot \frac{dQ}{dr} \qquad \frac{dQ}{dr} = -4\pi r^2 \varrho l$$

$$X = -\frac{4\pi r^4 \varrho}{a^2 \sigma} \cdot l$$

$$\frac{dv}{dt}.$$

$$v = \frac{4}{3}\pi r^3 + \left(1 - \frac{4}{3}\pi r^3 \varrho\right) \frac{1}{\sigma} = \frac{4}{3}\pi r^3 \left(1 - \frac{1}{\sigma}\right) + \frac{1}{\sigma}$$

$$r = \frac{a^2}{(w - p)} \sigma \qquad \frac{(w - p) r}{a^2} = \sigma$$

$$\frac{4}{3}\pi \frac{a^6}{(w - p)} \sigma^3 \left(1 - \frac{1}{\sigma}\right) + \frac{1}{\sigma}$$

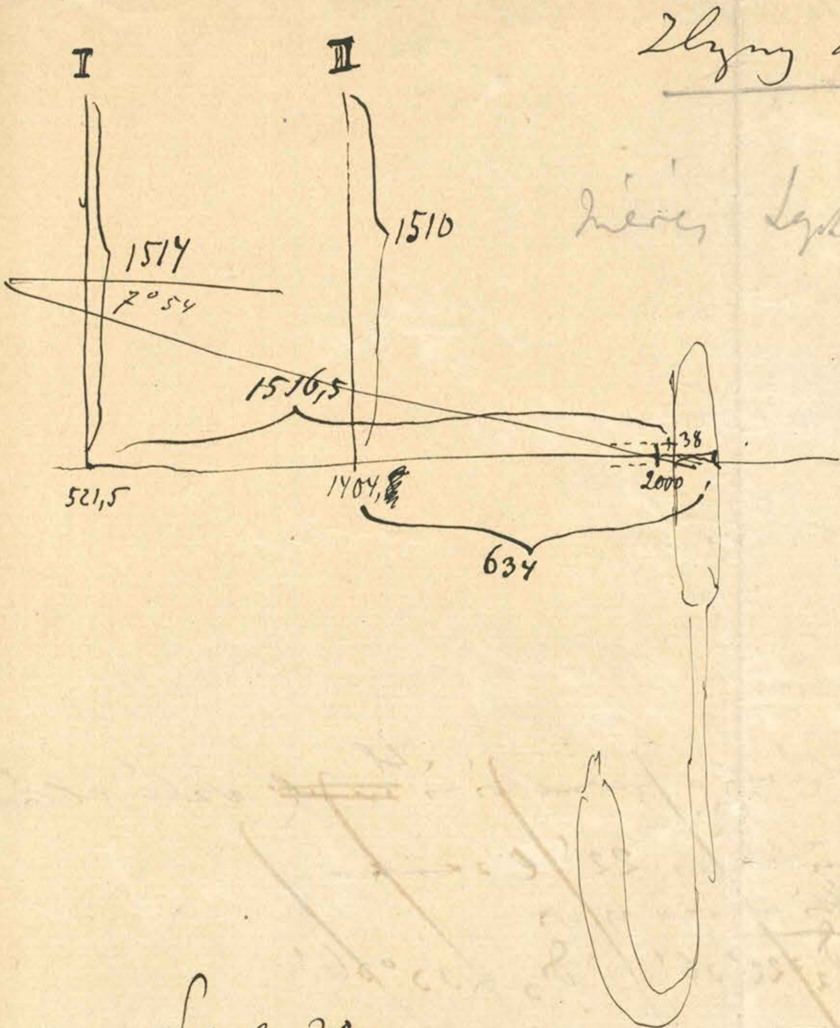
~~$\frac{4}{3}\pi \frac{a^6}{}$~~

Higany a barométerben

1822
278
1544

$\alpha_1 = 7°54'$

mérés Szept 19 ikén $\alpha_2 =$



Szept. 20

d. u. 12 óra 45 m

el. 1) 2) 3)	92, 20) 128, 94) 74	h.	94) 77, 17) 126, 91	e.	90) 125, 15) 75, 90	92) 71, 21) 126, 95

1 óráig

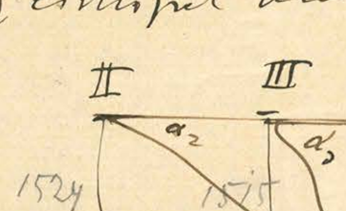
elhagytam

d. u.
3 óra 20

d. 1 (34) 126, 2 60 , 3 (34) 74   h. 35) 75, 60 , 34) 126

$n = 15$

Új csillapítással készült magasságok



$N_{12} = 0,24224$

$N_{23} = 0,14068$

d. u. 4 óra

e		h
1 (47) 201		48) 75
2 [struck]		73) 124
3 48		49
1 49) 207		49) 72
2 50		77) 131
1 49) 131		46
80) 75		
55		

$\alpha_1 = 7°54'$

$\alpha_1 = 7°54'$ $\delta_1 = 3°57'$

$\alpha_2 = 45°8'$ $\delta_2 = 22°34'$

$\alpha_3 = 67°18'$ $\delta_3 = 33°39'$

~~$N_{12} = 0,12064$~~ ~~0,12447~~ | ~~$N_{23} = 0,22797$~~ ~~0,13264~~ ~~$\lg N_2 = 3518721-1$~~ ~~$\lg \delta_{23} = 0,1334$~~

	h.	e.
1.	49) 172	2 54) 126
2.	77	2 80
3	52 125	1 55) 75

3/4 5 kor.

54) 7~~4~~
80) 74
49) 131

100 szor körülforgatásnyival villamozva

e.	h
45) 126	42) ~~74~~
71) 126	68) 74
45) ~~74~~	42) 126

~~A körforgató [illegible] eltérése miatt correctio [illegible] 22'-el számítva, a többi marad így:~~

~~$\vartheta_1 = 3^\circ 57'$ $\vartheta_2 = 22^\circ 36'$ $\vartheta_3 = 33^\circ 36'$~~

~~akkor aztán~~

~~$N_{12} =$~~

Az itt kiszámított értékek a darva értékei

68

állott higany

1) 72, 85 — 64,5 — 84,7
2) 57, 64,5 — 84,5 — 64,5
3) 21,5

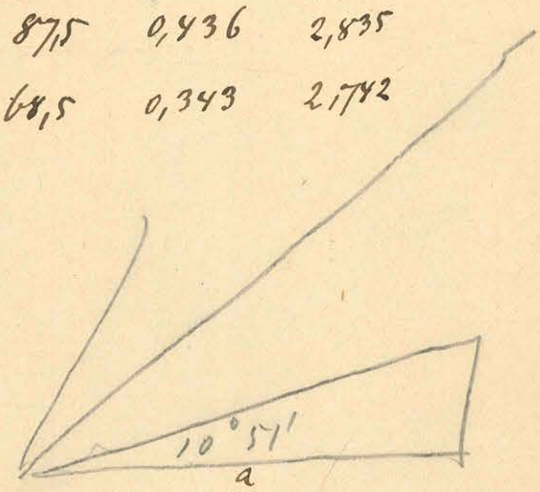
		a
84,7	0,424	2,757
64,5	0,323	2,582

100 [illegible] elektrométer

12 órakor

87, 87 — 69
72, 68 — 88
40

		a
87,5	0,436	2,835
68,5	0,343	2,742



12 óra 15

88,5 — 68
68 — 88

		a
88.2	0,441	2,867
68	0,34	2,718

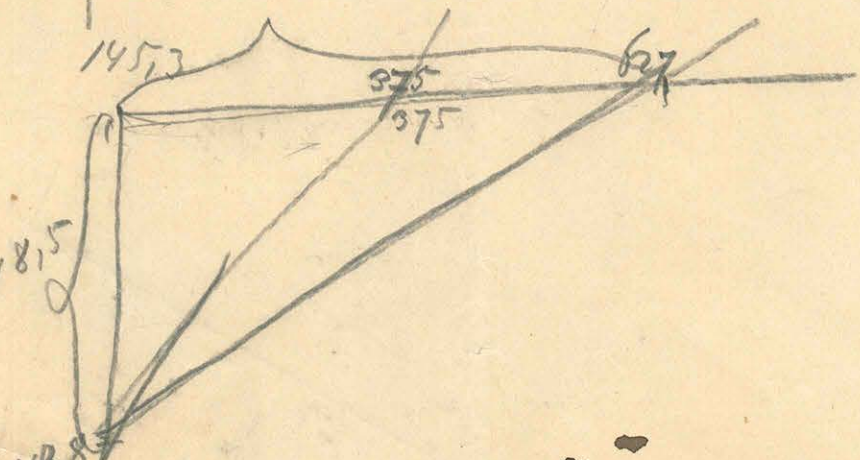
d. u. 3 órakor

87 — 68,5
68,5 — 86,5

		a
86,8	0,434	2,822
68,5	0,343	2,742

d. u. 4 órakor 87 / 68 | más helyen 88 / 68 — 88 / 68,5 | máshelyen 89 / 68

		a
88	0,44	2,861
68,3	0,341	2,726



$\vartheta_1 = 5°25'30''$

$\vartheta_2 = 17°57'$

$\vartheta_3 = 28°18'30''$

Königsberg [illegible]

~~a balatoni [illegible]~~

Egy formula és alkalmazása

Felületi feszültség

az 188[illegible]-i [illegible]

Kísérlet egy formulára

$$\frac{m}{a} = 1 + 0{,}306\frac{m}{r} + \alpha\frac{m^2}{r^2} + \beta\frac{m^3}{r^3} + \gamma\frac{m^4}{r^4}$$

kiszámítása egy Φ egyenletcsoportból.

alapul szolgál $\frac{m}{r} = 0{,}1$

$\frac{m}{r} = 0{,}17547$

$\frac{m^2}{r^2} = x \quad \frac{m^3}{r^3} = y \quad \frac{m^4}{r^4} = z$

$\log\frac{m}{r} = 0{,}2442029 - 1$

$\log x = 0{,}4884058 - 2$

$\log y = 0{,}7326087 - 3$

$\log z = 0{,}9768116 - 4$

$\frac{m}{a} = 1{,}0528$

$a = \frac{m}{a} - 1 - 0{,}306\frac{m}{r}$

$a = -0{,}0009$

$\log(-a) = 0{,}9542425 - 4$

$\frac{m}{r} = 0{,}28163$

$\log\frac{m}{r} = 0{,}4496789 - 1$

$\log x' = 0{,}8993578 - 2$

$\log y' = 0{,}3490367 - 2$

$\log z' = 0{,}7987156 - 3$

$a_1 = \frac{m}{a} = 1{,}0702$

$a' = -0{,}0160$

$\log(-a') = 0{,}2041200 - 2$

$\frac{m}{r} = 0{,}45779$

$\log\frac{m}{r} = 0{,}6606663 - 1$

$\log x'' = 0{,}3213326 - 1$

$\log y'' = 0{,}9819989 - 2$

$\log z'' = 0{,}6426652 - 2$

$a_2'' = \frac{m}{a} = 1{,}0244$

$a'' = -0{,}1157$

$\log(-a'') = 0{,}0629578 - 1$

$-(az' - a'z) = -0{,}0\overset{5}{0000}95062$

$-(a'z'' - a''z') = -0{,}0\overset{4}{000}24508$

$(xz' - x'z) = 0{,}\overset{3}{000}118501$

$(yz' - y'z) = 0{,}\overset{4}{0000}12812$

$(x'z'' - x''z') = 0{,}\overset{2}{00}21652$

$(y'z'' - y''z') = 0{,}\overset{3}{000}37752$

e szerint lesz.

$$9{,}5062 = 118{,}50\,\alpha + 12{,}812\,\beta$$

és

$$24{,}508 = 2165{,}2\,\alpha + 377{,}52\,\beta$$

$\log\alpha = 0{,}2848457 - 1$

$\log -\beta = 0{,}0171091$

$\log -\gamma = 0{,}1065404$

$\log 0{,}306 = 0{,}4857214 - 1$

és

$$\alpha = \frac{9{,}5062 \times 377{,}52 - 24{,}508 \times 12{,}812}{118{,}50 \times 377{,}52 - 2165{,}2 \times 12{,}812} =$$

$$\alpha = \frac{3588{,}78 - 313{,}997}{44736{,}1 - 27740{,}5} = \frac{3274{,}78}{16995{,}6} = 0{,}192684$$

β kiszámítható az első egyenletből

$$\beta = -1{,}04018$$

γ kiszámítva $\frac{m}{r} = 0{,}28163$-ra.

$$\gamma = -1{,}2780$$

tehát.

$$\frac{m}{a} = 1 + 0{,}306\frac{m}{r} + 0{,}19268\frac{m^2}{r^2} - 1{,}0402\frac{m^3}{r^3} - 1{,}2780\frac{m^4}{r^4}$$

A formula jól van pontosítva, mert.

$\frac{m}{r} = 0{,}17547$ re adja $\frac{m}{a} = 1 + 0{,}0537 + 0{,}0059 - 0{,}0056 - 0{,}0012 = 1{,}0528$ helyes.

$\frac{m}{r} = 0{,}45779$ re pedig $\frac{m}{a} = 1 + 0{,}1099 + 0{,}0404 - 0{,}0998 - 0{,}0561 = 1{,}0244$ helyes.

Kísérletileg ellenőrizni

1) $\frac{a}{r} = \frac{1}{4}$ re $\frac{z}{a} = 1{,}0832$ (1) formulából $\frac{h}{a} = 0{,}0737$ $\frac{m}{a} = 1{,}0695$ $\frac{m}{r} = 0{,}26737$

az új formula adja

$$\frac{m}{a} = 1 + 0{,}0878 + 0{,}0128 - 0{,}0199 - 0{,}0065 = 1{,}0692$$

2) $\frac{a}{r} = \frac{1}{5}$ re $\frac{z}{a} = 1{,}1150$ (1) formulából $\frac{h}{a} = 0{,}0515$ $\frac{m}{a} = 1{,}0635$ $\frac{m}{r} = 0{,}3545$

az új formula adja

$$\frac{m}{a} = 1 + 0{,}1085 + 0{,}0242 - 0{,}0463 - 0{,}0202 = 1{,}0662$$

ezeknek a formula jól van pontosítva de

Nem használható

	r_1	m	a^2	A	E	$m^2 +$	$2mh -$	$\frac{\Delta}{r} 0.0959 m^2 +$	$0.4292 \frac{\Delta}{r} mh -$	$\frac{a^2}{r} E$	$= a'^2$
Észlelve Poissonnal számítva $h = 0.017$	18.7	4.12	14.65.	8.646	1.720	16.97 +	0.140 −	0.755 −	0.015 −	1.347	= 15.001
Észlelve. B.-ből $h = 0.85$.	$r = 7.22$	3.765;	14.638 [illegible] számítva [illegible] 14,638	6.976.	1.644.	14.18 +	6.40 −	1.314 − 0,6 1,425	1.327 − 0,6	3.333 3,18 4,457	= 14.61. 14,70
B-ből számítva $\beta = 1$-el $h = 5.410$	2.396	2.075	14.638	2.444;	1.105	4.306 +	22.451 −	0.421 −	4.916 −	6.751	= 14.67
B-ből számítva $\rho = 0.125$-el $h = 15.304$.	0.9377	0.9131	14.638	0.9582	0.5713	0.8337 +	27.948 −	0.0816 − 6,21	6.128 − összeg 5,90	7.982 8,131	= 14.69.

$$\frac{\pi-2}{3}\frac{m^2}{a^2}=\frac{\pi}{4}\left(1+\frac{m}{r}\right)\left(1+\frac{1}{4}\left(\frac{1-\frac{m}{r}}{1+\frac{m}{r}}\right)^2+\frac{1}{64}\left(\frac{1-\frac{m}{r}}{1+\frac{m}{r}}\right)^4\right)-\frac{\pi}{2}\frac{m}{r}$$

$\frac{1}{64}\left(\frac{1-\frac{m}{r}}{1+\frac{m}{r}}\right)^4$ elhagyható

$$=\frac{\pi}{4}\left\{1+\frac{m}{r}+\frac{1}{4}\left(\frac{1-\frac{m}{r}}{1+\frac{m}{r}}\right)^2\left(1+\frac{m}{r}\right)-2\frac{m}{r}\right\}$$

$$\left\{1-\frac{m}{r}\right\}$$

$$\frac{m^2}{a^2}=2{,}06391\left\{1-\frac{m}{r}+\frac{1}{4}\left(1+\frac{m}{r}\right)\left(\frac{1-\frac{m}{r}}{1+\frac{m}{r}}\right)^2\right\}\quad \text{§}$$

Igazolás
lg 2,06391 = 0,3147011

$$\frac{m^2}{a^2}=2{,}06391\left\{1-\frac{m}{r}\right)\left(1+\frac{1}{4}\frac{1-\frac{m}{r}}{1+\frac{m}{r}}\right)\quad \text{I)}$$

1) ez a § formula ha

Bauschinger $\beta=0{,}1$ és $\frac{r}{m}$ 1,02180 tehát

$\frac{m}{r}=0{,}97866$ adja

$$\frac{m^2}{a^2}=\sqrt{2{,}06391\left\{1-0{,}97866+0{,}000058\right\}}=0{,}210154$$

Bauschingerből $\frac{m}{a}=\frac{m}{b}\sqrt{\frac{\beta}{2}}= \quad \ldots \quad =0{,}210163$

megegyezőnek hogy csak az 5-ik számjegy van eltérés tehát a megegyezés teljes.

2) ha Bauschinger $\beta=1$ akkor $\frac{r}{m}=1{,}15466$

ha $\frac{m}{r}=0{,}866056$

$\frac{m^2}{a^2}$ ~~= 2,06391 {1 − 0,866056~~ 0,133944 + I) szerint $\frac{m^2}{a^2}=2{,}06391\cdot 0{,}133944\left(1+0{,}01795\right)$

$=0{,}530719$

Bauschingerből. $\frac{m}{a}=\frac{m}{b}\sqrt{\frac{\beta}{2}}$ $=0{,}542216$

ha $p = 0{,}7$

akkor lesz a kifejezés jobb oldala $= 0{,}47140$

a baloldal pedig $0{,}48233$

28763
3,8
225304
84489
109015
7

0,17547
0,306
105282
526410
0,0536938 2

0,0528
0,0537
-0,0009

0,28763
0,306
168978
844890
0,0861,7878

0,0702
862
0,0160

0,45779
0,306
274674
1373370
1400,8474

244
1401
1157
244
1401

---

xz'
0,9542425 -4
0,7987156 -3
0,7529581 - 6

0,2041200 -2
0,9768116 -4
0,1809316 -5
0,0000151681
0,0000056619
0,0000095062

---

xz''
0,2041200 -2
0,6426652 -2
0,8467852 -4

0,0629578 -1
0,7987156 -3
0,8616734 -4
0,000727233
0,000702725
0,000024508

---

xz'
0,4884058 -2
0,7987156 -3
0,2871214 -4
0,000193692
75191
0,000118501

0,8993578 -2
0,9768116 -4
0,8761694 -5

---

yz'
0,7326087 -3
7987156 -3
0,5313243 -5
0,000033988
21176
12812

0,3490367 -2
0,9768116 -4
0,3258483 -5

---

x'z''
0,8993578 -2
0,6426652 -2
0,5420230 -3
0,0034836
13184
21652

~~y'z' 0,3490367 -2~~
0,3213326 -1
0,7987156 -3
0,1200482 -3

0,3490367 -2
0,6426652 -2
0,9917019 -4
0,00098107
60355
37752

0,9819986 -2
0,7987156 -3
0,7807142 -4

1) $\frac{m}{r} = 0,26737$ 2) $\frac{m}{r} = 0,3545$

0,4857214 − 1	0,2848457 − 1	0,0171091	0,1065404
0,4271127 − 1	0,8542254 − 2	0,2813387 − 2	0,7084508 − 3
0,9128341 − 2	0,1390711 − 2	0,2984472 − 2	0,8149912 − 3
0,0818	0,0138	− 0,0199	− 0,0065
138		65	
0,0956		264	
264			
0,0692			

2) $\frac{m}{r} = 0,3545$

0,5496162 − 1	0,0992324 − 1	0,6488486 − 2	0,1984648 − 2
0,4857214 − 1	2848457 − 1	0171091	1065404
0,0353376 − 1	0,3840781 − 2	0,6659577 − 2	0,3050052 − 2
0,1085	0,0242	0,0463	0,0202
242		202	
0,1327		665	
665			
0,0662			

Interpolation $\frac{a^2}{hm} = e^{\alpha\frac{r}{a}}$

$\frac{z}{a} = 1 + 0,206\frac{a}{r} + \alpha\frac{a^2}{r^2} + \beta\frac{a^3}{r^3} + \gamma\frac{a^4}{r^4}$

3,9

4857	1186	4196	8186
5911	11822	17733	23644
8946	9364	6463	4542

$\frac{z}{a} = 1 + 0,206\frac{m}{r} + \alpha'\frac{m^2}{r^2} + \beta'\frac{m^3}{r^3} + \gamma'\frac{m^4}{r^4}$

0,0785
86
28
899
44
855

2,3 től 3,3 ig.

4,1

4857	746	1186	4196	8186
6128	78	1,2256	1,8384	2,4512
87.9	23	8930	5812	3674
	837			
	38			
	799			

4,2

4857	729	1186	4196	8186
6232	75	12464	18696	24928
8625	21	8722	5500	3258
	825			
	36			
	789			

4,3

4857	712	1186	4196	8186
6335	71	1,2676	1,9605	25340
8522	19	8516	5191	2846
	802			
	33			
	769			

$\frac{m}{r}$	$\frac{h}{r}$	$\frac{r}{a}$	$\frac{m}{a}$
0,4982	0,0893	2	0,9965
0,4798	0,0754	2,1	1,0075
0,4625	0,0636	2,2	1,0175

$\frac{x}{a}=5$ $5,4i4$ $0,7335783$

$2,7206811$
0614187
$2,7820998$
$0,3667592$
$\lg\frac{a}{h}=2,4153406$
$\lg\frac{h}{a}=0,5846594-3$

$\frac{a}{h}=260,220$

$\frac{h}{a}=0,0038429$

5,1 $5,5i4$ $0,7414668$

$2,7820998$
0614187
$2,8435185$
3707334
$2,4727851$
$0,5272149-3$

$297,020$

$0,0033668$

5,2 $5,6i4$ $0,7492724$

$2,8435185$
0614187
$2,9049372$
3746362
$2,5303010$
$0,4696990-3$

$339,079$

$0,0029491$

5,3 $5,7i4$ $0,7569402$

$2,9049372$
0614187
$2,9663559$
3784701
$2,5878858$
$0,4121142-3$

$387,156$

$0,0025829$

5,4 $5,8i4$ $0,7644758$

$2,9663559$
0614187
$3,0277746$
3822375
$2,6455371$
$0,3544629-3$

$442,117$

$0,0022618$

5,5 $5,9i4$ $0,7718813$

$3,0277746$
0614187
$3,0891933$
$0,3859407$
$2,7032526$
$0,2967474-3$

$504,955$

$0,0019808$

5,6 $6,0i4$ $0,7791634$

$3,0891933$
0614187
$3,1506120$
3895817
$2,7610303$
$0,2389697-3$

$576,807$

$0,0017336$

5,7 $6,1i4$ $0,7863254$

$3,1506120$
0614187
$3,2120307$
$0,3936627$
$2,8183680$
$0,1816320-2$

$658,973$

$0,0015175$

5,8 $6,2i4$ $0,7933712$

$3,2120307$
0614187
$3,2734494$
$0,3966856$
$2,8767638$
$0,1232362-3$

$752,946$

$0,0013281$

5,9 $6,3i4$ $0,8003046$

$3,2734494$
0614187
$3,3348681$
$0,4001523$
$2,9347158$
$0,0652842-3$

$860,430$

$0,0011622$

9,0 97377

5,1774291
614187
5,2388478
4868850
7519628
2780372-5

$\frac{a}{h}$ = 56488,9

$\frac{h}{a}$ = 0,0000017703

9,1 97836

5,2388478
614187
5,3002665
4891800
8110865
1889135-5

64727,0

0,0000015545

9,2 98290

5,3002665
614187
5,3616852
4914500
8702352
1297648-5

77171,2

0,0000013482

9,3 98740

5,3616852
614187
5,4231039
4937000
1,9294039
0705961-5

84997,0

0,0000011765

9,4 99185

5,4231039
614187
5,4845226
4959250
1,9885976
0114624-5

97408,7

0,0000010266

9,5 99625

5,4845226
614187
5,5459413
4981250
5,0478163
9521837-6

(3)
111689

0,0000089574

9,6 99814 1,0006076

5,5459413
614187
5,6073600
0,5003038
5,1076562
8923438-6

127955

0,0000078153

9,7 1,0009229

5,6073600
614187
5,6687787
0,5024614
5,1663173
8336827-6

146663

0,0000068184

9,8 1,0011959

5,6687787
614187
5,7301974
0,5045979
5,2255995
7744005-6

168112

0,0000059484

9,9 1,0134271

5,7301974
1001614187
5,7916161
0,5067135
5,2849026
7150974-6

$\frac{1}{h}$ = 192710 0,0000051891

10

5,7916161 1,0176176
614187
5,8530348
5088088
5,3442260
1655774-6

$\frac{a}{h}$ = 220914 | 0,0000045266

8,0 92500

4,5632421
0614187
4,6246608
4625000
4,1621608
8378092-5

$\frac{q}{h} = 14526,5$

$\frac{h}{q} = 0,00006884$

8,1 93013

4,6246608
0614187
4,6860795
4650650
4,2210145
7789855-5

16634,7

0,00006011i5

8,2 93520

4,6860795
0614187
4,7477982
4676000
4,2798982
7201018-5

19150,1

0,00005249 3

8,3 94022

4,7477982
0614187
4,8089169
4701100
4,3388069
6611931-5

21817,5

0,00004583 5

8,4 94517

4,8089169
0614187
4,8703356
4725850
4,3977506
6022494-5

24989,1

0,00004001 7

8,5 95007

4,8703356
0614187
4,9317543
4750350
4,4567193
5432807-5

28023,2

0,00003493 7

8,6 95492

4,9317543
0614187
4,9931730
4774600
4,5157130
4842870-5

32788,1

1,00003049 9

8,7 95971

4,9931730
0614187
5,0545917
4798550
4,5747367
4252633-5

37561,0

1,00002662 3

8,8 96445

5,0545917
0614187
5,1160104
4822250
4,6337854
3662146-5

43031,5

1,00002323 9

8,9 96914

5,1160104
0614187
5,1774291
4845700
4,6928591
3071409-5

49301,5

1,00002028 3

6 6,414 0,8071290

3,3348681
0614187
3,3962868
0,4035645
$\lg\frac{a}{h}$ 2,9927223
$\lg\frac{h}{a}$ 0,0072777-3

$\frac{a}{h}$ = 983,382

$\frac{h}{a}$ = 0,0010169

6,1 6,514 0,8138478

3,3962868
0614187
3,4577055
0,4069239
3,0507816
0,9492184-4

1124,04

0,000889648

6,2 6,614 0,82076

3,4577055
0614187
3,5191242
4102300
3,1088942
0,8911058

1285,0

0,0007782

6,3 6,714 0,82698

3,5191242
0614187
3,5805429
4134900
3,1670529
0,8329471

1469,1

0,0006807

6,4 6,814 0,83320

3,5805429
0614187
3,6419616
4167000
3,2252616
0,7747384

1679,8

0,0005953

6,5 6,914 0,83973

3,6419616
0614187
3,7033803
4198650
3,2835153
0,7164847

1921,0 (1921,0)

0,0005206

6,6 7,014 0,84597

3,7033803
0614187
3,7647990
4229850
3,3418140
0,658186

2196,9

0,0004552

6,7 7,114 0,85211

3,7647990
0614187
3,8262177
4260550
3,4001627
0,5998373

2512,8

0,000398

6,8 7,214 0,85818

3,8262177
0614187
3,8876364
4290900
3,4585464
0,5414536

2874,4

0,0003479

6,9 7,314 0,86415

3,8876364
0614187
3,9490551
4320750
3,5169801
0,4830199

3288,4

0,0003041

7,0 7,414 87005

3,9490557
0614187
4,0104738
4350250
3,5754488
0,4245512 -4

$\frac{a}{h}$ = 3762,3

$\frac{h}{a}$ = 0,0002658

7,1 7,514 87587

4,0104738
0614187
4,0718925
4379350
3,6339575
0,3660425 -4

4304,8

0,0002323

7,2 88161

4,0718925
0614187
4,1333112
4308050
3,6925062
3074938 -4

4926,1

0,0002030

7,3 88728

4,1333112
0614187
4,1947299
4436400
3,7510899
2489101 -4

5637,5

0,00017738

7,4 89287

4,1947299
0614187
4,2561486
4364350
3,8097136
1902864 -4

6452,3

0,00015498

7,5 89840

4,2561486
0614187
4,3175673
4492000
3,8683673
1316327 -4

7385,3

0,00013541

7,6 90385

4,3175673
0614187
4,3789860
4519250
3,9270610
0729389 -4

8454,0

0,00011829

7,7 90924

4,3789860
0614187
4,4404047
4546200
3,9857847
0142153 -4

9678,0

1,00010333

7,8 91455

4,4404047
0614187
4,5018234
4572750
4,0445484
9554516 -5

11080,2

0,00009025

7,9 91981

4,5018234
0614187
4,5632421
4599050
4,1033371
8966629 -5

12586,3

0,00007882 5

$\frac{r}{a} = 4$

- log 0,4bk + lg(1−1/e) = 2,1064941
- $\log \frac{a}{h} =$ 1,8454966
- $\log \frac{h}{a} =$ 0,1545034 − 2
- $\frac{a}{h} =$ 70,0643
- $\frac{h}{a} =$ 0,0142726

r/a								log a/h	log h/a	a/h	h/a
4	4,414	0,6448323	2,1064941	0614187	2,1679128	0,3224162		1,8454966	0,1545034−2	70,0643	0,0142726
4,1	4,514	0,6545616	2,1679128	0614187	2,2293315	3272808		1,9020507	0,0979493−2	79,8088	0,0125300
4,2	4,614	0,6640776	2,2293315	0614187	2,2907502	3320388		1,9587114	0,0412886−2	90,9309	0,0109973
4,3	4,714	0,6733896	2,2907502	0614187	2,3521689	3366948		2,0154741	0,9845259−3	103,627	0,00964990
4,4	4,814	0,6825061	2,3521689	0614187	2,4135876	3412531		2,0723345	0,9276655−3	118,123	0,00846575
4,5	4,914	0,6914352	2,4135876	0614187	2,4750063	3457176		2,1292887	0,8707113−3	134,676	0,00742525
4,6	5,014	0,7001843	2,4750063	0614187	2,5364250	3500922		2,1863328	0,8136672−3	153,579	0,00651129
4,7	5,114	0,7087607	2,5364250	0614187	2,5978437	3543804		2,2434633	0,7565367−3	175,172	0,00570870
4,8	5,214	0,7171710	2,5978437	0614187	2,6592624	3585855		2,3006769	0,6993231−3	199,838	0,00500407
4,9	5,314	0,7254216	2,6592624	0614187	2,7206811	3627108		2,3579703	0,6420297−3	228,019	0,00438561

$\frac{r}{a}=3$ $\frac{r}{a}+\sqrt{2}-1 = 3,414$

lg 3,414 = 0,5332635

lg √2 = 0,1505150

lg √2 (r/a + √2 − 1) = 0,6837785

lg (r/a + √2 − 1) = 0,6837698 − 1

0,3215683

√2 (r/a + ...) lg e = 2,09686

√2 (r/a + √2 − 1) = 0,48281 · 0,4343

193124 / 144843 / 193124 / 144843

2,09684381

lg 0,28604 = 0,4568820 − 1

lg e ... + √2 ... lg e = 1,5537258

½ lg (r/a + √2 − 1) = 0,2666328

lg a/h = μ/a = 1,2870940

lg h/a = a/μ = 0,7129060 − 2

a/h = μ/a = 19,3684

h/a = a/μ = 0,051635

3,1 3,514 lg (r/a + √2 − 1) = 0,5458018

1,5537258
0,0614187
lg Kerekő = 1,6151445
½ lg (r/a + √2 − 1) = 0,2729009 − 1
~~0,8880454~~
1,3422436
0,6577564 − 2

21,9910

0,0454733

3,2 3,614 0,5579881

1,6151445
0614187
1,6765632
2789941 − 1
~~0,9555573~~
1,3975691
0,6024309 − 2

24,9787

0,0400342

3,3 3,714 0,5698419

1,6765632
0614187
1,7379819
2849210 − 1
~~1,0229029~~
1,4530609
0,5469391 − 2

28,3832

0,0352322

3,4 3,814 0,5813807

1,7379819
0614187
1,7994006
2906904 − 1
~~1,0900910~~
1,5087102
0,4912898 − 2

32,2634

0,0309949

3,5 3,914 0,5926208

1,7994006
0614187
1,8608193
2963104
~~1,1571297~~
1,5645089
0,4354911 − 2

36,6867

0,0272578

3,6 4,014 0,6035774

1,8608193
0614187
1,9222380
3027887
~~1,2250267~~
1,6194493
0,3805507 − 2

41,6341

0,0240189

3,7 4,114 0,6142643

1,9222380
0614187
1,9836567
3071322
~~1,29...89~~
1,6765245
0,3234755 − 2

47,4825

0,0210609

3,8 4,214 0,6246945

1,9836567
·0614187
2,0450754
3123473
~~1,3574227~~
1,7327281
0,2672719 − 2

54,0416

0,0185048

3,9 4,314 0,6348801

2,0450754
0614187
2,1064941
3174401
~~1,42...42~~
1,7890540
0,2109460 − 2

61,5253

0,0162535

4,0 0,2813

$\log 0,2813 = 0,4491697 - 1$
$+ \quad 7849024 - 1$
$0,8340721 - 1$

$1 + \frac{2k_2 - 1}{3}\left(\frac{1}{r} + \frac{1}{2r^2}\right)$ 1,1714
0,0687052
0,0343526 | 1,0823

4,1 0,2737

0,4377748 − 1
7849024
0,2221772

1,1668
0,0669964
0,0334982 | 1,0801

22

4,2 0,2664

0,4255342 − 1
7849024
0,2104366

1,1623
0,0653182
0,0326591 | 1,0781

20

4,3 0,2595

0,4141374 − 1
7849024
0,1990398

1,1587
0,0637461
0,0318731 | 1,0761

20

4,4 0,2531

0,4032921
7849024
0,1881945

1,1542
0,0622811
0,0311406 | 1,0743

18

4,5 0,2468

0,3923452
7849024
0,1772476

1,1504
0,0608489
0,0304245 | 1,0725

18

4,6 0,2410

0,3820170
7849024
0,1669194

1,1468
0,0594877
0,0297438 | 1,0709

16

4,7 0,2353

0,3716219
7849024
0,1565243

1,1434
0,0581982
0,0290991 | 1,0693

16

4,8 0,2300

0,3617278
7849024
0,1466302

1,1401
0,0569429
0,0284714 | 1,0677

16

4,9 0,2249

0,3579895
7849024
0,1368919

1,1370
0,0557605
0,0278802 | 1,0663

14

5,0 0,2200

0,3424227
7849024
0,1273251

1,1340
0,0546131
0,0273066 | 1,0649

14

5,1 0,2153

0,3330440
7849024
0,1179464

1,1312
0,0535394
0,0267697 | 1,0635

14

5,2 0,2108

0,3238706
7849024
0,1087730 − 1

1,1285
0,0525016
0,0262508
1,0623

12

5,3 0,2065

0,3149201
7849024
0,0998225

1,1258
0,0514612
0,0257306
1,0610

13

5,4 0,2024

0,3062105
7849024
0,0911129

1,1233
0,0504958
0,0252479
1,0598

12

5,5 0,1983

0,2973227
7849024
0,0822251

1,1208
0,0495287
0,0247641
1,0586

12

5,6 0,1945

0,2889196
7849024
0,0738220

1,1185
0,0486360
0,0243180
1,0575

11

5,7 0,1907

0,2803507
7849024
0,0652531

1,1162
0,0477420
0,0238710
1,0565

12

5,8 0,1872

0,2723058
7849024
0,0572082

1,1141
0,0469242
0,0234621
1,0555

5,9 0,1838

0,2643455
7849024
0,0492479

1,1120
0,0461048
0,0230524
1,0545

$\frac{r}{a}=2$ $\quad \frac{r}{a}+\sqrt{2}-1=2{,}414$

$\log \frac{r}{a}+\sqrt{2}-1 = 0{,}3827273$

$\log \sqrt{2} = 0{,}1505150$

$\log \sqrt{2}\left(\frac{r}{a}+\sqrt{2}-1\right) = 0{,}5332523$

$\sqrt{2}\left(\frac{r}{a}+\sqrt{2}-1\right)$ 3,414

0,4343

10242

13656

10242

13656

1,4827002

$\log 2{,}8834$ 0,4568820-1

0,9395822

0,1913687

$\log \frac{\mu}{\lambda} = \frac{\lambda}{h} = 0{,}7482135$

$\log \frac{h}{a} = \frac{a}{\mu} = 0{,}2517865-1$

$\frac{\mu}{a} = \frac{a}{h} = 5{,}6003$ $\quad \frac{h}{a} = \frac{a}{\mu} = 0{,}17856$

2,1 / 2,514

0,4003653

1505750

0,5508803

3,555

0,4343

10665

14220

10665

14220

1,5439365

4568820-1

1,0008185

0,2001827

0,8006358

0,1999642-1

$\frac{\mu}{a} = 6{,}2188$ $\quad \frac{h}{a} = 0{,}15826$

2,2 2,614

0,4173056

1505750

0,5678206

3,697

4343

11091

14788

11091

14788

1,6056071

4568820-1

1,0624891

0,2086528

0,8538363

0,1461637-1

5,72421

6,41487

177429 1

$\frac{\mu}{a} = 7{,}1420$ $\quad \frac{h}{a} = 0{,}14001$ ~~0,15826~~

2,3 2,714

0,4336098

1505150

0,5841248

3,838

4343

11514

15352

11514

15352

1,6668434

4568820

1,1237254

0,2168049

0,9069205

0,0930795-1

$\frac{\mu}{a} = 8{,}0709$ $\quad \frac{h}{a} = 0{,}12390$

2,4 2,814

0,4493241

1505150

0,5998391

3,980

4343

11934

1592

11934

1592

1,7285140

4568820

1,1853960

0,2246621

0,9607339

0,0392661

$\frac{\mu}{a} = 9{,}1955$ $\quad \frac{h}{a} = 0{,}10946$

2,5 2,914

$\log \frac{r}{a}+\sqrt{2}-1$ 0,4644895

1505750

0,6150045

4,121

4343

12363

16484

12363

16484

1,7897503

4568820

1,2466323

0,2322448

1,0143875

0,9856125-2

$\frac{\mu}{a} = 10{,}237$ $\quad \frac{h}{a} = 0{,}096741$

2,6 3,014

0,4791422

1505150

0,6296582

4,262

4343

12786

17048

12786

17048

1,8509866

4568820

1,3078686

0,2395716

1,0682970

0,0317030-2

$\frac{\mu}{a} = 11{,}703$ $\quad \frac{h}{a} = 0{,}085448$

2,7 3,114

0,4933186

1505750

0,6438936

4,404

4343

12212

17616

12212

17616

1,9126572

4568820

2,3695392

0,2466593

1,1228799

0,8771201-2

$\frac{\mu}{a} = 13{,}270$ $\quad \frac{h}{a} = 0{,}075356$

2,8 3,214

0,5070459

1505150

0,6575609

4,545

4343

13635

18180

13635

18180

1,9738935

4568820

1,1730755

0,2535229

1,1772526

0,8227474-2

$\frac{\mu}{a} = 15{,}0405$ $\quad \frac{h}{a} = 0{,}066489$

2,9 3,314

0,5203525

1505150

0,6708675

4,687

4343

14061

18748

14061

18748

2,0355641

4568820

1,4924461

0,2601763

1,2322698

0,1767302-2

$\frac{\mu}{a} = 17{,}0714$ $\quad \frac{h}{a} = 0{,}058577$

2 0,6250

$\log 0,6250 = 0,7958800 - 1$

7849024

0,5807824 −1

$1+\frac{\sqrt{5}-1}{2}\left(\frac{\sqrt{5}+1}{2}\right)^{3}$ 1,3809

$\log 1,3809 = 0,1401622$

$\frac{1}{2}\log = 0,0700811$

1,1751

93

2,1 0,5895

0,7704838

7849024

0,5553862

1,3592

0,1332834

0,0666417

1,1658

88

2,2 0,5578

0,7464785

7849024

0,5313807

1,3369

0,1270724

0,0635362

1,1575

75

2,3 0,5293

0,7223019

7849024

0,5086043

1,3225

0,1213957

0,0606978

1,1500

69

2,4 0,5035

0,7019995

7849024

0,4869019

1,3068

0,1162091

0,0581046

1,1431

2,5 0,4800

0,6812412

7849024

0,4661426

1,2925

0,1114306

0,0557153

1,1368

63

2,6 0,4585

0,6622199

7849024

0,4462417

1,2794

0,1070063

0,0535032

1,1311

57

2,7 0,4390

0,6424645

7849024

0,4273669

1,2675

0,1029480

0,0514740

1,1268

53a

2,8 0,4208

0,6240757

7849024

0,4089781

1,2564

0,0991279

0,0495639

1,1209

49

2,9 0,4042

0,6065963

7849024

0,3914987

1,2463

0,0956226

0,0478113

1,1163

46

3 0,3888

0,5897263

7849024

0,3746287

1,2369

0,0923246

0,0461623

1,1121

42

3,1 0,3746

0,5735678

7849024

0,3584702

1,2282

0,0892646

0,0446323

1,1082

38

3,2 0,3610

0,5578680

7849024

0,3427704

1,2202

0,0864210

0,0432105

1,1046

36

3,3 0,3489

0,5427010

7849024

0,3276034

1,2126

0,0837176

0,0418588

1,1011

35

3,4 0,3374

0,5281451

7849024

0,3130475

1,2056

0,0812032

0,0406016

1,0980

31

3,5 0,3264

0,5137502

7849024

0,2986526

1,1989

0,0787830

0,0393915

1,0949

29

3,6 0,3160

0,5000992

7849024

0,2850016

1,1927

0,0765312

0,0382656

1,0921

27

3,7 0,3068

0,4868554

7849024

0,2717578

1,1869

0,0744141

0,0372070

1,0894

27

3,8 0,2977

0,4737788

7849024

0,2586812

1,1814

0,0723970

0,0361985

1,0869

25

3,9 0,2892

0,4611983

7849024

0,2461007

1,1762

0,0704812

0,0352406

1,0845

24

Sr Eltheendi

$m = 3{,}765$ $r = 7{,}22$ $a = 3{,}826$ $a^2 = 14{,}638$ $\frac{r}{m} = 1{,}918$ Barkspottkbit

$\beta = 40{,}5$ $b = \frac{a^2}{h}$

$\beta = \frac{2b^2}{a^2}$

Barkspottkbit számítva $h = 0{,}85$

$m^2 = 14{,}18$ $\frac{m^2}{r} = 1{,}964$

$h + m = 4{,}615$

$$\beta = \frac{2}{a^2}\frac{a^4}{h^2} = \frac{2a^2}{h^2}$$

$$h = \sqrt{\frac{2a^2}{\beta}}$$

$$m^2 + 2mh - \frac{1}{r}(h+m)^2 A - \frac{2}{3}\frac{1}{r}m^2 A + \frac{\pi}{2}\frac{(h+m)\,m}{r}A - \frac{a^2}{r}\xi = a^2 \quad \left(+\frac{A}{r}h^2\right)$$

$$14{,}18 + 6{,}40 - 20{,}58 - 9{,}131 + 26{,}077 - 3{,}101$$

$$A = m^2\frac{2(m+h)r - a^2}{a^2 r}$$

$$m^2 + 2mh - \frac{A}{r}\left(h^2 + \left(1 + \frac{2}{3} - \frac{\pi}{2}\right)m^2 + \left(2 - \frac{\pi}{2}\right)hm\right) - \frac{a^2}{r}\xi = a^2$$

$$\xi = \frac{\pi}{4}(A+m)\left\{1 + \frac{1}{4}\left(\frac{A-m}{A+m}\right)^2 + \frac{1}{64}\left(\frac{A-m}{A+m}\right)^4 + \cdots\right\} - A$$

(0,7854)

$$m^2 + 2mh - \frac{A}{r}\left(h^2 + 0{,}0959\,m^2 + 0{,}4292\,hm\right) - \frac{a^2}{r}\xi = a^2$$

$A = 6{,}976$

$\xi = 1{,}678$ $1{,}644$

$2{,}641$ $a^2 = 14{,}59$

$$h = \frac{a^2}{r} + \frac{5}{3}m\frac{A^2}{r^2} - 2m\frac{A}{r} + \frac{m(r-A)A\pi}{2r^2}$$

$$m^2 + 2mh - \frac{A}{r}\left(0{,}0959\,m^2 + 0{,}4292\,hm\right) - \frac{a^2}{r}\xi = a^2$$

jó

$$h = \frac{a^2}{r} + \left(0{,}0959\frac{A^2}{r^2} - 0{,}4292\frac{A}{r}\right)m$$

Gürtelbild Febr. 4 este 8 kor

formula kis $\frac{r}{m}$-ekre.

A nyomásból levezetett formula.

$$m^2+2mh-\frac{1}{r}(h+m)^2A+\frac{A}{r}h^2+\frac{2}{3}\frac{1}{r}m^2A+\frac{\pi}{2}\frac{(h+m)}{r}mA-\frac{a^2}{r}\Big\}=a^2$$

pedig ha $A=r$ tétetik

$$m^2\left(\frac{\pi}{2}-\frac{2}{3}\right)+\frac{\pi}{2}hm=a^2\frac{\pi}{4}\frac{r+m}{r}\left(\frac{1}{4}\left(\frac{r-m}{r+m}\right)^2+\frac{1}{64}\left(\frac{r-m}{r+m}\right)^4\right)$$

mint pedig

~~nyomás~~ súlyából r,m ellenyomás.

$$h=\frac{a^2}{r}-\frac{m}{3}\quad \text{azért}$$

$$\left(\frac{1}{3}\pi-\frac{2}{3}\right)m^2+\frac{\pi}{2}\frac{m}{r}a^2=$$

$$\left(\frac{1}{3}\pi-\frac{2}{3}\right)\frac{m^2}{a^2}=\frac{\pi}{16}\left\{\left(1+\frac{m}{r}\right)\left\{\left(\frac{1-\frac{m}{r}}{1+\frac{m}{r}}\right)^2+\frac{1}{16}\left(\frac{1-\frac{m}{r}}{1+\frac{m}{r}}\right)\right\}-8\frac{m}{r}\right\}$$

3,141592
1,047197
0,666667
0,380531

228318
38053
6,08848
1,52212

$$=\frac{\pi}{4}\left(1+\frac{m}{r}\right)\left\{1+\frac{1}{4}\left(\frac{1-\frac{m}{r}}{1+\frac{m}{r}}\right)^2+\frac{1}{64}\left(\frac{1-\frac{m}{r}}{1+\frac{m}{r}}\right)^4\right\}-\frac{\pi}{2}\frac{m}{r}.$$

1,141592
0,380531
1,522124

$\log\pi = 0,4971500$
1824489
$\log 2,06391 = 0,3147011$

$$\frac{m^2}{a^2}=2,06391\left\{\left(1+\frac{m}{r}\right)\left(1+\frac{1}{4}\left(\frac{1-\frac{m}{r}}{1+\frac{m}{r}}\right)^2+\frac{1}{64}\left(\frac{1-\frac{m}{r}}{1+\frac{m}{r}}\right)^4\right)-2\frac{m}{r}\right\}$$

$\frac{1}{36}=0,027771$

1,027771

1,5
513885
1027772
1,546666

$$\left(1+\frac{1}{2}\right)\left(1+\frac{1}{36}+\frac{1}{64}\cdot\frac{1}{81}\right.$$

1,547.

1/36/100
72
280
252
28

/0,0277

$\frac{1}{2}$

$\frac{3}{2}$

$\frac{1}{4}\cdot\frac{1}{9}$

2,064.
0,547
14448
8256
10320
1,129008

173339
86669
$\frac{1}{9}$

$$\frac{m^2 + 2mh - \alpha A m^2 - \beta A h m}{m^2 + 2mh - \alpha A m^2 - \beta A h m} = \frac{\left(h - \alpha m A^2 + \beta m A\right)(1+\varepsilon)}{\frac{(h+m)}{\frac{A^2}{2m^2} + \frac{1}{2}}(1+\varepsilon}$$

$$h - \alpha m A^2 + \beta m A = \frac{h+m}{\frac{A}{2m^2} + \frac{1}{2}}$$

$$h\frac{A}{2m^2} - 2\alpha m^2 A^2 + \frac{\beta}{2} m^2 A^2 + \frac{1}{2}h - \frac{1}{2}\alpha m A^2 + \frac{1}{2}\beta m A = h + m$$

$$a^2 = \frac{2m^2 + 2m^2 h}{A + m^2} \qquad m^2 = \frac{2m^2 + 2h}{\frac{A}{m^2} + 1}$$

$$\alpha A^2 + \beta A = 1$$
$$\alpha + \beta = 1$$

$$\beta = \frac{2}{a^2} + 2\frac{h}{a^2} - 1$$

$$\frac{A}{r} = \pm\left(\frac{2r^2}{a^2}\right) + 2\frac{rh}{a^2} - 1$$

$$\frac{m^2}{2} =$$

$$\frac{m}{2} = \Theta\left(1 - \frac{\pi}{4}\right)$$

$$\Theta = \frac{m}{2 - \frac{\pi}{2}}$$

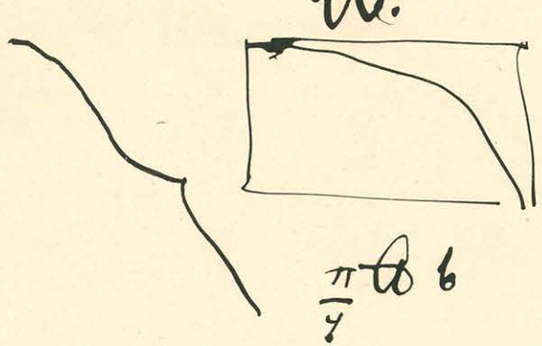
3,1416

1,5708

0,4292

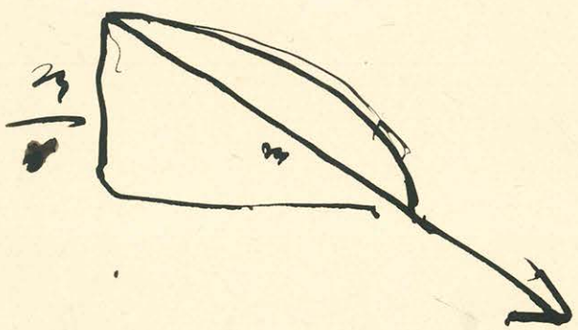
4292 / 10000 / 2,3299
85841
14160
12876
12840
8584
42560

$\Theta = 2{,}330\,m$



$\frac{\pi}{4}\Theta$ b

$\Theta\left(1 - \frac{\pi}{4}\right)$



$$A\left\{\frac{a^4}{4m^2}+\beta^2m^2+\frac{a^2\beta m}{m^2}-\alpha m\frac{a^2}{2}-\alpha m^2\right\}=\frac{a^4}{4m^2}+\frac{a^3}{2m}+\frac{\beta}{2}a^2m+\beta m^2$$

$$A\left\{a^4+4\beta^2m^4+4\beta a^2m-2\alpha m^3a^2-4\alpha m^4\right\}=a^4+2ma^2+2\beta m^3a^2+4\beta m^4$$

$$A=\frac{a^4+2ma^2+2\beta m^3a^2+4\beta m^4}{a^4+4(\beta^2-\alpha)m^4+4\beta a^2m-2\alpha m^3a^2}$$

$$h=\frac{a^6+2m^2a^4+2\beta m^3a^4+4\beta m^4a^2}{2m^2a^4+8(\beta^2-\alpha)m^6+8\beta a^2m^3-4\alpha m^5a^2}+\frac{a^2}{2}-m$$

A. m

h. m.

Víz $l_1 = 411{,}7$

$a^2_4 = 15{,}502$	7,624	
$a^2_{40,4} = 14{,}268$	7,078	
$a^2_{74,6} = 13{,}276$	6,473	

$\frac{da}{dt} = 0{,}0164$; $l_1' = 468$; 140° ; $d = 5$; $\frac{da}{dt} \cdot \frac{1}{a} = 0{,}00214$

0,148

Alcohol $l_1 = 224{,}0$

$a^2_6 = 6{,}0150$	2,4358	
$a^2_{22} = 5{,}6040$	2,2054	
$a^2_{46} = 5{,}2619$	2,0771	

0,009 ; $l_1' = 299$; $\frac{\mu}{dt} \cdot \frac{1}{a_0} = 0{,}00374$

Szénkéneg $l_1 = 271°$

$a^2_{7,5} = 5{,}6346$	3,6121	
$a^2_{36} = 5{,}0879$	3,1393	

$l_1'' = 287$.

0,0461 ; $a_0 = 3{,}737$; $a_{40} = 3{,}070$

232

Chloroform $l_1 = 260°$

$a^2_{3,3} = 3{,}952$	3,003	
$a^2_{16} = 3{,}760$	2,859	
$a^2_{47,4} = 3{,}3030$	2,374	

0,0145 ; $l_1' = 205$; 31,4 ; 0,01414 ; 0,0463

Ether $l_1 = 190$

$a^2_{2,5} = 5{,}231$	1,9567	$\frac{da}{dt} = 0{,}01219$
$a^2_{19,8} = 4{,}885$	1,7452	$\frac{da}{dt} = 0{,}01205$
$a^2_{39,0} = 4{,}370$	1,5102	

0,0119 ; $l_1' = 166$; 15,8 ; $d_{19,8} = 1{,}746$; 0,0066

$l'' = 204$

$a^2 = 5{,}296 - 0{,}0264\,t$

$a^2 = 5{,}296\,(1 - 0{,}00483\,t)$

0,00483

Van egy maximalis [illegible] a gőz feszültsége. Ez függ a hőmérséklettől.

Aether

Víz.

-20 3,24 [illegible]

-10

0

10

20

30

40

50

60

70

80

90

100

110

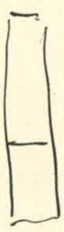
120

$$\frac{h}{a^2} \qquad \frac{2(h+m)}{a^2} - \frac{1}{r}$$

$$\frac{\frac{1}{\rho}}{\frac{1}{\rho'}} = \frac{2h+m}{h} - \frac{hr}{a^2}$$

ρ ρ'

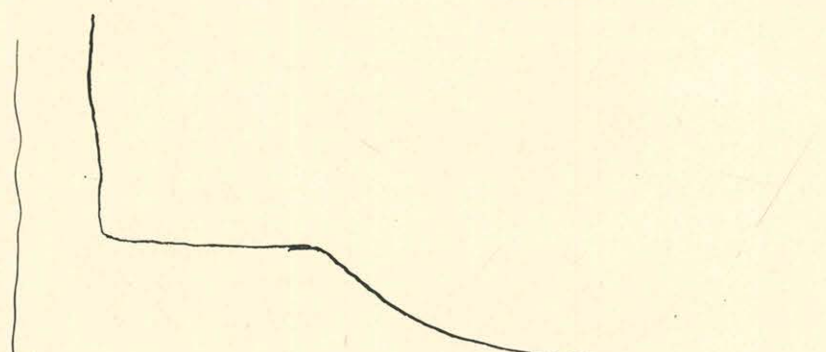
Zárt



Ez függ [illegible]

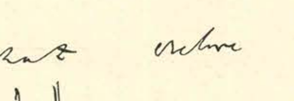
Ez függ [illegible]

[illegible] vonalai.



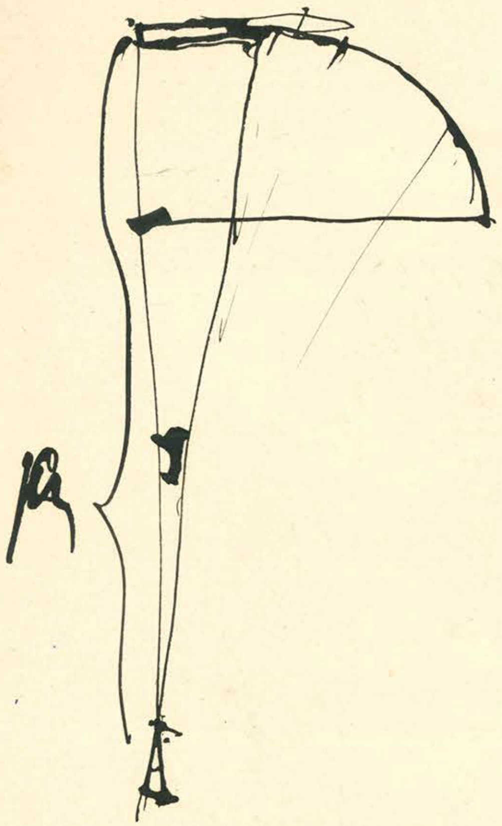
Hőmérsékleti vonalai.

Periodikus [illegible] [illegible] [illegible] egy [illegible].



[illegible] a [illegible]

Kritikus temperatura [illegible] több [illegible]. [illegible]



u zdu

dz

ρ

$(\rho - (z + h - \rho\cos\vartheta)\sin\vartheta$

$(z - h) + \rho\cos\vartheta$

$(\rho - z + h - \rho\cos\vartheta)\sin\vartheta\, dz$

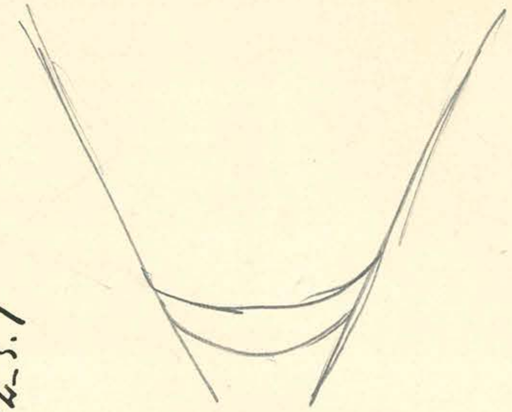
$\rho\sin\vartheta\, dz - z\, dz\sin\vartheta + h\sin\vartheta\, dz - \rho\sin\vartheta\cos\vartheta\, dz$

$- \sin^2\vartheta\cos\vartheta\, d\vartheta$

$\rho = \frac{d\vartheta\sin\vartheta}{dz}$

$\frac{1}{\rho}$

$\rho = \frac{dz\sin\vartheta}{d\vartheta\sin\vartheta}$



r = 17,9 m = 2,810 | 0,1570

179
1020
895
1250
1253

~~m = 1,570~~

$m_1 = 0,157$
$m^2 = 0,0246$
$m^3 = 0,00387$
$m_4 = 0,00060$
$m_5 = 0,00010$

0,0246
0,0039
2214
738
0,00009594

0,00387
1,9
3483
387
0,007353

$$a^2 = \frac{0,0246 - 0,0074 + 0,0015 - 0,00003}{1 - 0,2477 + 0,0211} = 0,0187$$

1,578
,157
11046
7890
1578
247746

$a^2 = 0,02418$
320,4
9672
48360
~~274~~
7254
7,747272

0,0384
0,0096
0,284

0,0246
0015
0,0261
74
0,0187

0,0074

1,0211
2477
0,7734

0,

281 | 5704 | 2,03
562
840
843

0,2836

2,81
0,0094
1124
2529
0,26414

7734 | ~~0,0~~18700 | 0,02418
15468
32320
30936
13840
7734
61060

0,281

~~412~~

17,9 | 722 | 716 | 600 | 537 | 600

0,4033
~~0,264~~
0,0264
0,4297
379
0,05

0,858
0,157
6006
4290
858
0,134706

0,8584

17,9 | 5704 | 0,3186
537
334
179
1550
1432
1180

4033
0,358
0,045

0,1274
2,81
1274
10192
2548
0,357994

1372
0,0098
0,1274

2,81
0,135
1405
843
281
0,37935

$\frac{\lambda}{r} = 0,219$
0,0959

$\frac{\lambda^2}{r^2} = 0,102$
0,096
612
918
0,009792

0,219
0,43
657
1276
10717

$$A = 2m$$

$$h = \frac{a^2}{r} + \left(4 \cdot 0{,}0959 \frac{m^2}{r^2} - 2 \cdot 0{,}4292 \frac{m}{r}\right) m$$

$$\frac{h}{r} = \frac{a^2}{r^2} + \frac{m}{r}\left(4 \times 0{,}0959 \frac{m^2}{r^2} - 2 \times 0{,}4292\right) m$$

~~$A a^2 r = 2 m^2 r + a^2$~~ $\quad 0{,}3836$

$$h = \frac{a^2}{r} + \left(0{,}3836 \frac{m^2}{r^2} - 0{,}8584 \frac{m}{r}\right) m$$

$$A = m^2 \frac{2mr + a^2}{a^2 r}$$

$2{,}4 \,/\, 2{,}075 \,/\, 0{,}86$

$2{,}4 \,/\, 14{,}638 \,/\, 6{,}1 + \left(0{,}28 - 0{,}74\right) 2{,}07$

$$A = \infty$$

$$h = \frac{2m^2 r}{a^2 r} \cdot \frac{2m}{}$$

$$A = 2m$$

$$h = m^2 \frac{2mr + a^2}{a^2 r}$$

$$A = \frac{m^2 a^2 r}{a^2 r} \frac{m}{}$$

$$m^2 + 2m \frac{a^2}{r} + 2m^2 \left(0{,}3836 \frac{m^2}{r^2} - 0{,}8584 \frac{m}{r}\right) m - \frac{2m}{r}\left(0{,}0959 m^2 + 0{,}4292 \cdot\right.$$

$$A = m^2 \frac{2mr - a^2}{a^2 r}$$

$$\frac{\pi}{4} g m \left\{1 + \frac{1}{4} \frac{1}{9}\right\}$$

Kritikus hőmérsékletek.

Az anyag neve	Vegyi alkata	t	H	P	Észlelő	Módszer
Methylal s. Formal	$C_3H_8O_2$	223,6	496,6		Pawlewsky	Cöben
Aethylal s. Acetal	$C_6H_{14}O_2$	254,4	527,4		"	"
Triäthylamin	$C_6H_{15}N$	267,1	540,1		"	"
Isapentan	C_5H_{12}	194,8	467,8		"	"
Amylen	C_5H_{10}	201,0	474,0		"	"
Hexan norm.	C_6H_{14}	250,3	523,3		"	"
Diallyl	C_6H_{10}	234,4	507,4		"	"
Diisobutyl	C_8H_{16}	270,8	553,8		"	"
Caprylen s. Octylen norm.	C_8H_{16}	298,6	571,6		"	"
Tolual	C_7H_8	320,8	593,8		"	"
Norm. Butylalkahal	$C_4H_{10}O$	287,1	560,1		"	"
Trimethylcarbinal	$C_4H_{10}O$	234,9	507,9		"	"
Isoamylalkahol	$C_5H_{12}O$	306,6	579,6		"	"
Aethylacetanat	$C_5H_{10}O_2$	326,0	599,0		"	"
Aethylpropyläether	$C_5H_{12}O$	233,4	506,4		"	"
Allyläthyläther	$C_5H_{10}O$	245,0	518,0		"	"
Essigsäure	$C_2H_4O_2$	321,5	594,5		"	"
Propionsäure	$C_3H_6O_2$	339,9	612,9		"	"

…er	Irodalmi forrás	Másodlat.
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Kritikus körnérsékletek.

Anyag neve.	Vegyi alkata.	t	T	P	Észlelő	Módszer	Tro…
Légenyéleg (Nitrogénoxyd)	N_2O	−11°…+8°			Cailletet		C. …
Légenyéleg (Nitrogénoxydul)	N_2O	36·5	309·5	73 a	Jansen	Andrews	
Kénessav	SO_2	157…161			Laüdenburg	Csöval.	
Chlór.	Cl	148	421.		"	"	
Aether	$(C_2H_5)_2O$.	196	469		"	"	
Sósav	$H.Cl$.	51·25	324·25		Ansdell	Cailletet	
Acethylén	C_2H_2	37	310		"	"	
Szénoxysulphid	COS	105°	378.		Klosvay	Cailletet	
Aethylformiat	$C_3H_6O_2$	238·6	511,6		Pawlewsky	Csäben	
Propylformiat	$C_4H_8O_2$	267·4	540,4		"	"	
Isoamylformiat	$C_6H_{12}O_2$	304·6	577,6		"	"	
Methylacetat	$C_3H_6O_2$	239·8	512,8		"	"	
Aethylacetat	$C_4H_8O_2$	256·5	529,5		"	"	
Propylacetat	$C_5H_{10}O_2$	282·4	555,4		"	"	
Normal-Butylacetat	$C_6H_{12}O_2$	305·9	578,9		"	"	
Isabutylacetat	$C_6H_{12}O_2$	295,8	568,8		"	"	
Methylpropionat	$C_4H_8O_2$	262,7	535,7		"	"	
Aethylpropionat	$C_5H_{10}O_2$	280,6	553,6		"	"	
Propylpropionat	$C_6H_{12}O_2$	304,8	577,8		"	"	
Isabutylpropionat	$C_7H_{14}O_2$	318,7	591,7		"	"	
Aethylbutyrat	$C_6H_{12}O_2$	304,3	577,3		"	"	
Propylbutyrat	$C_7H_{14}O_2$	326,6	599,6		"	"	
Methylisobutyrat	$C_5H_{10}O_2$	273,6	546,6		"	"	
Aethylisobutyrat	$C_6H_{12}O_2$	290,4	563,4		"	"	
Propylisobutyrat	$C_7H_{14}O_2$	316,0	589,0		"	"	
Phosphorchlorür	PCl_3	285,5	558,5		"	"	
Tetrachlormethan	CCl_4	285,3	558,3		"	"	
Aethylenchlorid	$C_2H_4Cl_2$	ca 283	556		"	"	
Aethylidenchlorid	$C_2H_4Cl_2$	254,5	527,5		"	"	
Allylchlorid	C_3H_5Cl	ca 240,7	513,7		"	"	
Aethylbromid.	C_2H_5Br	236,0.	509,0		"	"	

	Irodalmi forrás	Másodlagos
	C. R. 84 kk. 1857.	Beibl. I. 15.
		Beibl. II 136
		" II. 334.
		"
		"
		Beibl. IV. 310.
		" IV 84.
		Beibl. VI. 579.
		Beibl VII 357.
		"
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		Beibl. VIII. 203
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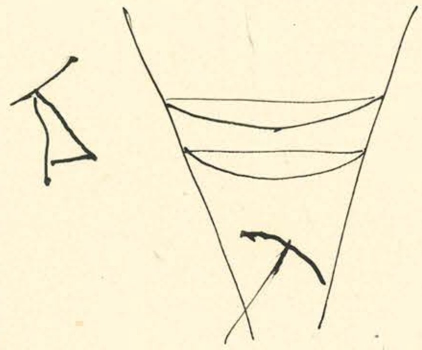
$$\mu = 0{,}2565 \cdot 4\pi \sqrt{\frac{a}{r + a\sqrt{-1}}}\; e^{\frac{\sqrt{2}}{a}(r + a\sqrt{-1})}$$

$$\frac{\frac{d^2 z}{dx^2}}{\sqrt{}} = \frac{z}{a^2} \qquad \frac{\frac{dz}{dx}}{x\sqrt{1+\left(\frac{ds}{dx}\right)^2}} = \frac{2z}{a^2}$$



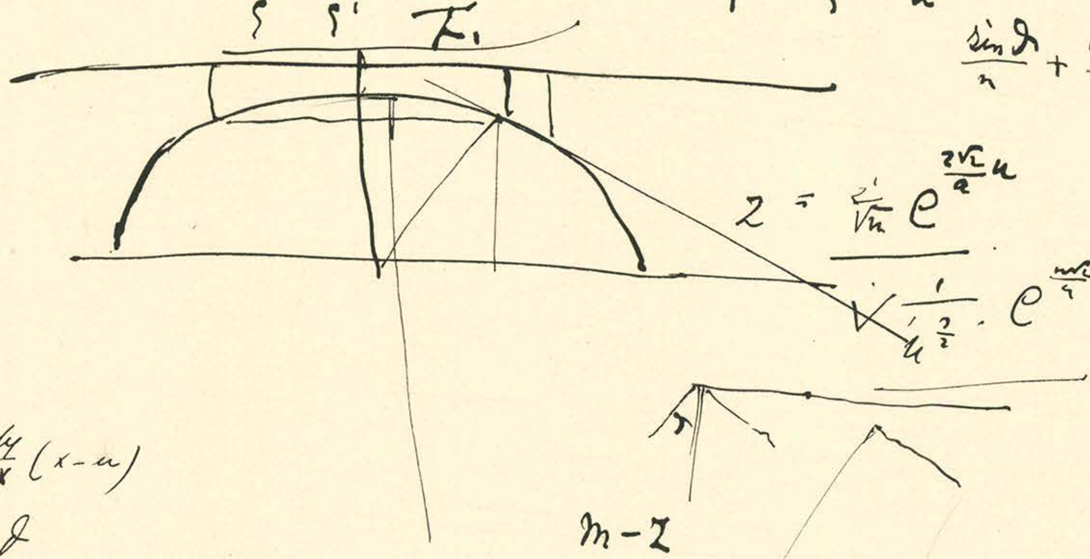
ρ $\sin\vartheta$

$\int \rho\, dz\, dz' + \int \rho'\, dz'\, dz = \rho\rho'\, dz\, dz'\, K \sin\vartheta$

$$\frac{1}{\rho} + \frac{1}{\rho'} = \frac{2z}{a^2}$$

$$\frac{1}{\rho} + \frac{1}{\rho'} = \frac{K z \sin\vartheta}{\Sigma_1}$$

$$\frac{\sin\vartheta}{n} + \frac{d \cos\vartheta}{dn} = \frac{n}{a^2}$$



$$z = \frac{\frac{1}{\sqrt{u}}\, e^{\frac{2\sqrt{2}}{a} u}}{\sqrt{\frac{1}{u^{\frac{3}{2}}}}\cdot e^{\frac{u\sqrt{2}}{a}}}$$

$\rho\, d\varphi = ds.$

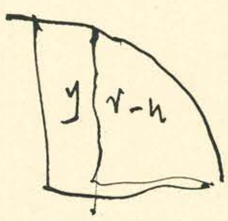
$$y - z = \frac{dy}{dx}(x - u)$$

$$\frac{y - z}{x - u} = \operatorname{tg}\vartheta.$$

$m - z$

$z' = 2\cos\vartheta$

$h' =$



$r - u$

$$x = \frac{A - r + u}{\cdots}$$

$z = c$

y

$$\frac{\frac{d^2 z}{dx^2} = K z}{d\frac{ds}{dx}}$$

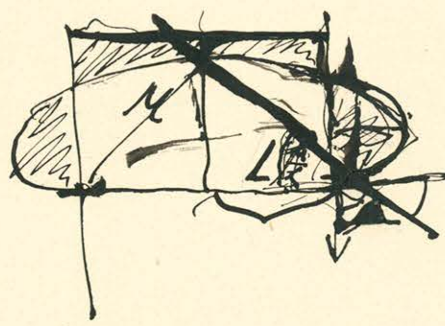
$z = e^{\sqrt{K}x}.$

$m - 2 =$

$(h + M)\, l^2 \pi$

$- l^2 \pi \frac{M}{2}$

$l^2 \pi \left(h + M\right) \frac{\varepsilon}{2\pi}$



ε

$\operatorname{arc\,tg} \frac{M}{L}$

$$\frac{l^2}{2}\left(h + \frac{2}{3}M\right) \varepsilon K.$$

$$-\int l\, d\varepsilon \cos\left(\operatorname{arc\,tg}\frac{M}{L}\right) + \frac{l^2}{2}\left(h + \frac{2}{3}M\right)\varepsilon K \sin\left(\operatorname{arc\,tg}\frac{M}{L}\right) = 0$$

$$a^2 = l\left(h + \frac{2}{3}M\right) \operatorname{tg}\left(\operatorname{arc\,tg}\frac{M}{L}\right)$$

$$a^2 = M\left(h + \frac{2}{3}M\right)$$

$\operatorname{arc\,sin}\frac{\vartheta}{2}$

$m^2 = 2a^2$

$\lambda = 2m$ $\qquad 0,6959 = \alpha$ $\qquad 0,4296 = \beta$.
$0,4220 = \gamma$

$$\mathcal{E} = 0,7854 \cdot 3m\left\{1 + \frac{1}{36}\right\} - 2m \qquad 2,3562$$

$$h = \frac{a^2}{r} + 4\alpha m \frac{m^2}{r^2} - 2\beta \frac{m}{r} m$$

$$m^2 + 2mh - \frac{2m}{r}\alpha m^2 - \frac{2\beta m^2}{r}\left(\frac{a^2}{r} + 4\alpha m \frac{m^2}{r^2} - 2\beta \frac{m}{r} m\right) - \gamma \frac{a^2}{r} m = a^2$$

$$m^2 + 2m\frac{a^2}{r} + 8\alpha m^2 \frac{m^2}{r^2} - 4\beta \frac{m^2}{r} m - 2\beta \frac{a^2}{r^2} m^2 - \frac{2m}{r}\alpha m^2 - 8\alpha\beta \frac{m^5}{r^3} + 4\beta^2 \frac{m^4}{r^2} - \gamma \frac{a^2}{r} m = a^2$$

$$\frac{m^2}{r^2} + 2\frac{m}{r}\frac{a^2}{r^2} + 8\alpha \frac{m^2}{r^2}\frac{m^2}{r^2} - 4\beta \frac{m^2}{r^2}\frac{m}{r} - 2\beta \frac{a^2}{r^2}\frac{m^2}{r^2} - 2\alpha \frac{m}{r}\frac{m^2}{r^2} - 8\alpha\beta \frac{m^5}{r^5} + 4\beta^2 \frac{m^4}{r^4} - \gamma \frac{m}{r}\frac{a^2}{r^2} = \frac{a^2}{r^2}$$

$$\frac{a}{r} = (a) \qquad \frac{m}{r} (=) m.$$

$$a^2 = \frac{m^2 + 8\alpha m^4 - 4\beta m^3 - 2\alpha m^3 - 8\alpha\beta m^5 + 4\beta^2 m^4}{1 - 2m + 2\beta m^2 + \gamma m} = \frac{m^2 - \overset{1,909}{(4\beta + 2\alpha)} m^3 + \overset{2,484}{(8\alpha + 4\beta)} m^4 - \overset{0,3293}{8\alpha\beta} m^5}{1 - \underset{1,578}{(2-\gamma)} m + \underset{0,8584}{2\beta} m^2}$$

$$a^2 = \frac{m^2 - 1{\cdot}909\, m^3 + 2{\cdot}484\, m^4 - 0{\cdot}3293\, m^5}{1 - 1{\cdot}578 m + 0{\cdot}8584\, m^2}$$

$$\begin{array}{r} 1,028 \\ 2,356 \\ \hline 6168 \\ 5146 \\ 2084 \\ 2056 \\ \hline 2,421968 \\ 2 \end{array} \qquad 1,578$$

$$\begin{array}{r} 1,7168 \\ 0,1918 \\ \hline 1,9086 \end{array} \qquad 1,909$$

$$\begin{array}{r} 0,7672 \\ 1,7168 \\ \hline 2,4840 \end{array}$$

α°	$\frac{r}{h}=\frac{1}{\cos\alpha}\left\{\frac{1}{2}(1+\cos\alpha)\int_{\frac{\pi}{4}}^{\frac{\pi}{2}}-\mathfrak{E}_{\frac{\pi}{4}}^{\frac{\pi}{2}}\right\}$	$\frac{a}{h}=\frac{tg\alpha}{\sqrt{2}}$	$\frac{r}{a}=\frac{\frac{r}{h}}{\frac{a}{h}}$	$\frac{h}{a}=\frac{\sqrt{2}}{tg\alpha}$
0	0,	0,	0,	∞
10	0,0077619	0,1246820	0,0622360	8,0204000
20	0,0328862	0,2573660	0,1277867	3,8855180
30	0,0819190	0,4082480	0,2006645	2,4494920
40	0,1700450	0,5933340	0,2865920	1,6853920
50	0,3328830	0,8426960	0,3950210	1,1866670
60	0,6659470	1,2247460	0,5437440	0,8164950
70	1,5016210	1,9427590	0,7729320	0,5147320
80	4,8328000	4,0102000	1,2051280	0,2493640
81	5,7091440	4,4644970	1,2787880	0,2239894
82	6,8303430	5,0313270	1,3575630	0,1987547
83	8,3372660	5,7589230	1,4477130	0,1736436
84	10,4462050	6,7227620	1,5527280	0,1486398
85	13,5619050	8,0822670	1,6779890	0,1237277
86	18,5304100	10,1121000	1,8324990	$0,0988914_2$
87	27,4313300	13,4924000	2,0330900	0,0741158
88	46,9271300	20,2488900	2,3175170	$0,0493854_2$
89	113,6727800	40,5101200	2,8060350	0,0246852
90	∞	∞	∞	0,

$\frac{2hr}{a^2}$	Laplace - Poisson $\frac{2hr}{a^2}\left(1+\left(1-\frac{\pi}{4}\right)\frac{r}{h}\right)$	Volkmann $\frac{2hr}{a^2}\left(1+0{,}2146\frac{r}{h}-0{,}052\frac{r^2}{h^2}\right)$ $0{,}2146 = 1-\frac{\pi}{4}$	Hagen $\frac{2hr}{a^2}\sqrt[3]{1+2\frac{r^2}{a^2}}$	$\frac{2hr}{a^2}\left(1+2\left(1-\frac{\pi}{4}\right)\frac{r^2}{a^2}\right)$
1,	1,	1,	1,	1,
0,99833	1,00000	1,00000	1,00091	1,00000
0,99303	1,00004	0,99998	1,00373	1,00000
0,98306	1,00031	0,99997	1,00874	1,00001
0,96605	1,00130	0,99986	1,01627	1,00001
0,93752	1,00449	0,99909	1,02637	1,00007
0,88793	1,01482	0,99429	1,03664	1,00060
0,79571	1,05212	0,95875	1,03408	0,99744
0,60103	1,22437	0,49441	0,94643	0,97570

$F = 7{,}6330 - 0{,}01369\,t - 0{,}00003546\,t^2$

Wolf

$z = ae^{fu} + be^{fz}$

$\frac{dz}{du} = afe^{fu} + bfe^{fz} = fz.$

$z = cue^{fu}$

$z = ce^{fu^2}$

$\int z\,du$

$\frac{\sin\vartheta}{u} + \frac{d\vartheta\cos\vartheta}{du} = \frac{u}{a^2}$

$z = e^{\frac{u}{a}\sin^2\frac{\vartheta}{2}}$

$z = e^{\frac{x-u}{a}\sin^2\frac{\vartheta}{2}}$

$z = \xi e^{\frac{u}{a}\sin^2\frac{\vartheta}{2}}$

$1-\cos\vartheta$

$m(1-\cos\vartheta)$

$1-\cos\vartheta = 1-\cos^2\frac{\vartheta}{2}+\sin^2\frac{\vartheta}{2})$

$2\sin^2\frac{\vartheta}{2}$

$z = 2a^2,$

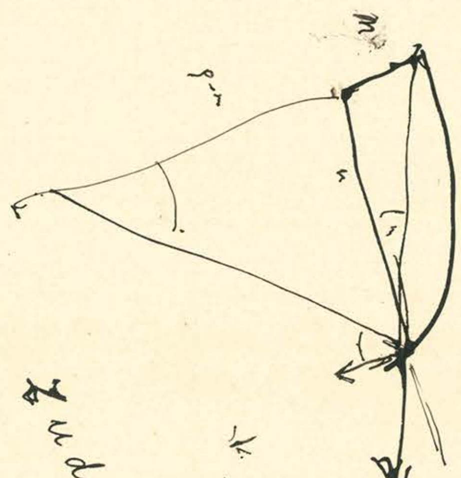
$z = 2\sqrt{a}\sin\frac{\vartheta}{2}$

$\frac{\sin\vartheta}{u} + \frac{\sin\vartheta}{\frac{m}{\sqrt{2}}\left(1+\frac{m}{u}\right)\sin\frac{\vartheta}{2}^{\frac{m}{u}}\cos\frac{\vartheta}{2}} = \sin\frac{\vartheta}{2}^{1+\frac{m}{u}}$

$z-h = 2\sqrt{a}\sin\frac{\vartheta}{2}\,e^{\frac{u}{x}}$

$z-h = \sqrt{2}\,m\sin\frac{\vartheta}{2}$

$z-h = \frac{\sqrt{2}\,m\sin^2\frac{\vartheta}{2}}{\sin\frac{\vartheta}{2}\frac{u-m}{u}}$



$z-h = 2m\sin^2\frac{\vartheta}{2}$

$\sqrt{2}^{1-\frac{m}{u}}\cdot\sin$

$\frac{u-m}{u}$

$\sin\frac{\vartheta}{2}^{2-u} \quad 1+\frac{m}{u}$

$z-h = \sqrt{2}\left(\sin\frac{\vartheta}{2}\right)^{1+\frac{m}{u}}$

$m = \sqrt{2}\,m\left(\frac{1}{\sqrt{2}}\right)^{1+\frac{m}{u}}$

$\int_0 \int_0 \frac{z}{u}\,du\,dx$

$\int_0 \int_0 uz\,du\,dx = \int_0 u\,dx$

$z-h = \sqrt{2}\,m\sin\frac{\vartheta}{2}^{1+\frac{m}{u}}$

$\tan\vartheta = \frac{m}{\sqrt{2}}\left(1+\frac{m}{u}\right)\sin\frac{\vartheta}{2}^{\frac{m}{u}}\cos\frac{\vartheta}{2}\,\frac{d\vartheta}{du}$

$z-h = \sqrt{2}\,m\sin\frac{\vartheta}{2}\cdot\sin\frac{\vartheta}{2}^{\frac{m}{u}}$

$\frac{d\vartheta}{du}$

$\frac{d\vartheta}{du}\cos\vartheta = \frac{\sin\vartheta}{\frac{m}{\sqrt{2}}\left(1+\frac{m}{u}\right)\sin\frac{\vartheta}{2}^{\frac{m}{u}}\cos\frac{\vartheta}{2}}$

$\frac{dz}{du} = af e^{fu} + bf e^{fu} = f z.$

$z = cu e^{fu}$

$z = c e^{fu^2}$

$\frac{d^2z}{du^2} =$

$\frac{dz}{du} = c e^{fu} +$

$\frac{dz}{du} = c e^{fu^2} f \cdot 2u$

$\frac{d^2z}{du^2} = c e^{fu} f \ldots$

$z = c$

$z = c \frac{1}{u} e^{fu}$

$\frac{dz}{du} = c \frac{1}{u} e^{fu} + c \frac{1}{u} f e^{fu} =$

$\frac{dz}{du} = -c \frac{1}{u^2} e^{fu} + c \frac{1}{u} f e^{fu} = \frac{1}{u} z + f z$

$\frac{d^2z}{du^2} = -\frac{1}{u^2} z + \frac{1}{u} \frac{dz}{du} + f \frac{dz}{du} = -\frac{1}{u^2} z + \frac{1}{u^2} z + \frac{1}{u} f z + f \frac{z}{u} + f^2 z$

$= 2 \frac{fz}{u} + f^2 z$

$\frac{2fz}{u} + f^2 z + \frac{fz}{u} + \frac{z}{u^2} = \frac{zz}{u^2}$

$\frac{3fz}{u} + f^2 z + \frac{z}{u^2} = \frac{zz}{u^2}$

~~$z = a$~~

$z = \frac{c}{\sqrt{u}} e^{uf} + \frac{c}{\sqrt{u}}$

$\frac{dz}{du} = -\frac{1}{2} \frac{c}{u\sqrt{u}} e^{uf} - \frac{1}{2} \frac{c}{u\sqrt{u}} + \frac{c}{\sqrt{u}} f e^{uf}.$

$\frac{dz}{du} = -\frac{c}{2u} z + f z - f \frac{c}{\sqrt{u}}$

$\frac{d^2z}{du^2} = \left(f - \frac{c}{2u}\right) \frac{dz}{du} + f \frac{c}{u\sqrt{u}}$

$\left(f - \frac{c}{2u}\right) \frac{dz}{du} + f \frac{c}{u\sqrt{u}} - \frac{c}{2u^2} z - \frac{fz}{u} - \frac{fc}{u\sqrt{u}}$

$\left(z\, du + \frac{1}{2} \ldots\right)$

a

$$32^2 - \xi^2 - 22\xi = 8a^2 \sin^2 \frac{\delta}{2}$$

$$6z\,\mathrm{tg}\,\delta - 2\xi\,\mathrm{tg}\,\delta = 8a^2 \sin\frac{\delta}{2}\cos\frac{\delta}{2}\frac{d\delta}{du}$$

$$= 4a^2 \sin\delta \frac{d\delta}{du}$$

$$3z - \xi = 2a^2 \sin\delta \frac{d\delta}{du}$$

$$du = \frac{2a^2 \sin\delta \frac{d\delta}{du}}{3z - \xi}$$

$$z^2 - \frac{1}{3}\xi^2 \qquad z^2 - \frac{2}{3}z\xi = \frac{8}{3}a^2\sin^2\frac{\delta}{2} - \frac{1}{3}\xi^2$$

1-a

$$\frac{z^2}{2} - \frac{\xi^2}{2} - \frac{a^2}{4}\sin^2\frac{\delta}{2} - \frac{a^2}{2}$$

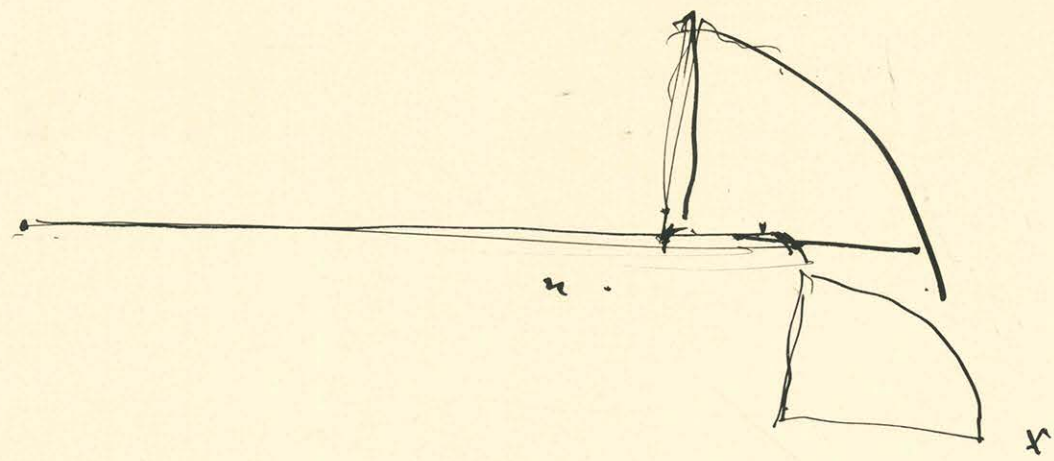
$$\frac{a^2}{r} - 2m\frac{1}{r} + \frac{\pi m}{2}\frac{1}{r} + \left(\frac{5}{3} - \frac{\pi}{2}\right) m\frac{1}{r^2}$$

$$\begin{array}{r} 3{,}1415 \\ 1{,}571 \\ \hline 0{,}429 \end{array}$$

$\frac{du}{u}\sin\delta$

$$\frac{a^2}{r} - 0{,}429\, m\frac{1}{r} + \frac{1}{10} m\frac{1}{r^2}$$

$$\frac{1}{r} = \frac{m^2}{r^2}\cdot\frac{(2m+1)r - a^2}{a^2}$$



$u\,d\varphi\,dm\,y$

$2\pi u\,dm\,y$

$\frac{x^2}{A^2} + \frac{y^2}{B^2} = 1$

$y^2 = \frac{B^2}{A^2}(A^2 - x^2)$

$B^2 - \frac{B^2}{A^2}x^2$

$y = B\sqrt{1 - \frac{x^2}{A^2}}$

$r - A + x = u$

$x = u + A - r$

$x - A.$

$$2\pi\int_{u=r-A}^{u=r} u\,dm\,y = 2\pi\int_0^A (r - A + x)\,B\sqrt{1 - \frac{x^2}{A^2}}\,dx$$

$$= 2\pi B(r-A)\int_0^A \sqrt{1 - \frac{x^2}{A^2}}\,dx + 2\pi B\int_0^A \sqrt{1 - \frac{x^2}{A^2}}\,x\,dx$$

$\int\sqrt{1 - \frac{x^2}{A^2}}\,dx$ $\qquad \int\sqrt{1-\xi^2}\,d\xi = \frac{\xi}{2}\sqrt{1-\xi^2} + \frac{1}{2}\arcsin x$

$\frac{x}{A} = \xi \qquad dx = A\,d\xi$

$\int\sqrt{1 - \frac{x^2}{A^2}} = \frac{A\pi}{4}$

$\int\sqrt{1 - \frac{x^2}{A^2}}\,x\,dx = \frac{x}{2}\sqrt{1 - \frac{x^2}{A^2}} + \frac{A^2}{2}\arcsin\frac{x}{A}$

$\frac{A}{2}\,\frac{\pi}{2}$

$2\pi B(r-A)A\frac{\pi}{4} + 2\pi B\frac{A^2}{3}$

$$z = C\,\frac{1}{\sqrt{u}}\,e^{fu} \qquad f = \frac{\sqrt{2}}{a}$$

$$\frac{d^2z}{du^2} = f^2 z + \frac{3}{4}\frac{z}{u^2} - f\frac{z}{u}$$

$$\frac{1}{u}\frac{dz}{du} = f\frac{z}{u} - \frac{z}{2u^2}$$

$$f^2 z + f^2 z - \frac{1}{4}\frac{z}{u^2} = \frac{2z}{a^2}$$

$$f^2 = \frac{2}{a^2} - \frac{1}{2u^2}$$

$$f^2 = \frac{4u^2 - a^2}{2a^2u^2} = \frac{1}{2au\sqrt{2}}\cdot 2u\left(1 - \frac{1}{4}\frac{a^2}{u^2}\right)$$

$$\frac{u}{a}\sqrt{2}\left(\frac{2}{\cdot}\right.$$

$$2u - \frac{1}{4}\frac{4}{u}$$

$$\frac{\sqrt{2}}{a} - \frac{1}{4\sqrt{2}}\frac{a}{u^2}$$

$$\frac{\sqrt{2}}{a}\left(1 - \frac{1}{8}\frac{a^2}{u^2}\right)$$

$$\frac{dz}{du} = \frac{f\frac{dz}{du}}{1-2f} + \frac{2f^2}{(1-2f)^2}$$

$$\frac{d^2z}{du} = \frac{2zf^2}{(1-2f)^2}$$

$$\frac{2zf^2}{(1-2f)^2} + \frac{1}{4}\frac{2f}{1-2f} = \frac{z}{4u^2}$$

$$z = e\,e^{fu}$$

$$\frac{dz}{du} = cf\,e^{fu} = fz$$

$$\frac{d^2z}{du^2} = f^2 z$$

$$f^2 z + \frac{1}{u}fz = \frac{2z}{a^2}$$

$$f = \sqrt{\frac{2}{a^2}} \qquad z = C$$

$$z = a\,e^{fu} + b\,e^{\cdots}$$

$$z = a\,e^{f(u+2)}$$

$$\frac{dz}{du} = a\,e^{f(u+2)}\left(1 + \frac{dz}{du}\right)$$

$$\frac{dz}{du} = zf + zf\frac{dz}{du}$$

$$\frac{dz}{du} = \frac{zf}{1-zf}$$

Csontolaj

Belső átmérő 15·3

Temp. 23° C. (D)

~~m = 2·728~~

m = 2,878

575	575·6
576	
576	
576.	

Belső Átm. ~~[illegible]~~ 10·26

530, 532, 529, 531, 530	531	530·5

m = 2·653

~~Újabb mérés~~

~~azonnal { 403, 403·5~~

~~Később {~~

Belső átmérő: 19·5 mm.

beállítás után azonnal mérve { 585, 584

Később mérve { 585·5, 584

584·60

m = 2·923

Belső átmérő 28·8

azonnal lemérve { 580, 578

(erős kiszívással alsó szél homályos)

Később " { 579, 578.

578·8

m = 2·894

Belső átmérő. 35·8.

azonnal lemérve { 562, 562

Később { 561, 563

562

m = 2·810

Szűk cső

Belső átmérő 5·20

azonnal { 403, 403·5

Később { 403, 403.

$h = \frac{a^2}{\mu}$

$$\mu = 0{,}28634\, a \sqrt{\frac{a}{r + a(\sqrt{2}-1)}}\, e^{\frac{\sqrt{2}}{2}(r + a(\sqrt{2}-1))}$$

Coll. a borsi (?) ~~1,915~~ 1,04

~~a = 1,957~~ ~~(?)~~

a = 1,915

r = 4,5

7660
19150
1,9 9 2 ~~0~~

1,4142

1,414191

$\frac{\sqrt{2}}{2}$ = 104 / 1992 / 1,915
952
160
540

4142
1,915
20710
4142
37278
4142
0,793190
4,5
5,293
1,414
21172
5293
21172
5293 ... 2 = **3,908**

1,915 | 7,48436
5,745
1,7393
1,7235
15800

0,7237019

r + a√2 − 1 = 5,293

log 0,28634

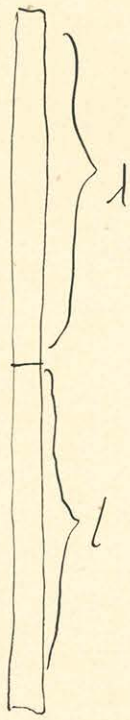
3,908
0,43747
11724
15632
11724
15632
1,6972444
0,4568820 −1
~~0,2403624~~
1,1541266
0,2821688
0,1141084
1,1577798
0,3618509
1,1215289

μ = 16,41

a² = 3,667

16,41 / 3,667 / **0,2235**
3282
3850
3282
5680
4920
7570

h = 0,224



$$s_0 l_0 + \sigma_0 \lambda_0 = C$$
$$= s l + \sigma \lambda$$

$$s_0 l_0' + \sigma_0 \lambda_0' = s l' + \sigma \lambda'$$

eliminando s e σ ficam s_0 e σ_0

$$\frac{s_0 l_0 + \sigma_0 \lambda_0}{\lambda} - \frac{s_0 l_0' + \sigma_0 \lambda_0'}{\lambda'} = s\left(\frac{l}{\lambda} - \frac{l'}{\lambda'}\right)$$

$$= s\,\frac{l\lambda' - l'\lambda}{\lambda\lambda'}$$

$$s = \frac{\lambda'(s_0 l_0 + \sigma_0 \lambda_0) - \lambda(s_0 l_0' + \sigma_0 \lambda_0')}{l\lambda' - l'\lambda}$$

$$s = \frac{s_0(\lambda' l_0 - \lambda l_0') + \sigma_0(\lambda'\lambda_0 - \lambda\lambda_0')}{l\lambda' - l'\lambda}$$

$l = n\lambda \qquad l' = n\lambda'$

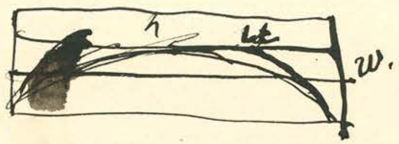
$$\frac{s_0(\lambda' n\lambda_0 - \lambda n\lambda_0') + \sigma_0(\lambda'\lambda_0 - \lambda\lambda_0')}{n\lambda\lambda' - n\lambda'\lambda}$$

$$(n s_0 + \sigma_0)(\lambda'\lambda_0 - \lambda\lambda_0')$$

Annotation

478
478
477'5

$s_0 l_0 + \sigma_0 \lambda_0 = C$ ✓
$s_0 l_0' + \sigma_0 \lambda_0' = C'$ ✓



η határa w.

$$2r\frac{k(m+h)^2}{2} - 2rk\frac{h^2}{2} - k\int_{y=B,\ x=0}^{y=B-m,\ x=w}((h+B)-y)^2\,dx + kh^2w - 2rf(1-\cos\vartheta) - 2L\int_{y=B,\ x=0}^{y=B-m,\ x=w}(ds-dx) = 0$$

$$m^2+2mh - \frac{1}{r}\int_{\zeta=B}^{\zeta=B-m}(h+m-\zeta)^2\,du + \frac{h^2}{r}A$$

$$m^2+2mh - \frac{1}{u}\int_{y=B,\ x=0}^{y=(B-m),\ x=w}((B+m)-y)^2\,dx + h^2\frac{w}{u} - 2a^2\sin^2\frac{\vartheta}{2} - \frac{a^2}{u}\int_{y=B\ \ x=0}^{y=B-m\ \ x=w}(ds) + \frac{a^2}{u}w = 0$$

$h+B-y$

$$\int(B+h-y)^2\,dx = (B+h)^2w + \int_{x=0}^{x=w}y^2\,dx - 2(B+h)\int y\,dx$$

$$\int_0^w y^2\,dx = B^2w - \frac{1}{3}\frac{B^2}{A^2}w^2$$

$$\int y\,dx = \frac{B}{2}\sqrt{1-\frac{w^2}{A^2}} + BA\arcsin\frac{w}{A}$$

$$\int ds = a\int_0^t\sqrt{1-e^2\sin^2 t}\,dt \quad \Big| \quad e^2 = \frac{A^2-B^2}{A^2}$$

$$1-\sin^2\frac{\vartheta}{2}$$

$$= \cos^2\frac{\vartheta}{2} + \sin^2\frac{\vartheta}{2} + 2\sin^2\frac{\vartheta}{2}$$

$$\cos^2\frac{\vartheta}{2} + \sin^2\frac{\vartheta}{2} - 2\sin^2\frac{\vartheta}{2}$$

$$\cos^2\frac{\vartheta}{2} - \sin^2\frac{\vartheta}{2} = \cos\vartheta$$

$$\sin x = x - \frac{x^3}{3!} + \frac{x^5}{5!} - \frac{x^7}{7!}$$

$$\cos x = 1 - \frac{x^2}{2!} + \frac{x^4}{4!} - \frac{x^6}{6!} + \frac{x^8}{8!}$$

Acetone $t = 23°$

$m = \frac{462,4}{200} = 2,312$ $\quad a = 2,188$ $\quad a^2 = 4,788$

$r = 5,68$ $\quad b = 25,53$ $\quad h = 0,188$

$m^2 = 5,345$ $\quad A = 4,640$

$2mh = 0,869$ $\quad \varepsilon = 0,982$

$6,214$

$1,399$

$a'^2 = 4,815$

$a' = 2,194$

$\frac{A}{r}\, 0,4292\, hm = 0,153$

$\frac{A}{r}\, 0,0959\, m^2 = 0,418$

$\frac{a^2}{r}\varepsilon = 0,828$

$1,399$

16,0100 / 0,006
3

2194   56   229   2194
18   276   34   3
2,176   336   195   2,164

Actler.

Actler, $r = 5{,}68$ $a = 2{,}176$ ~~2,164~~ $a^2 = 4{,}735$

Hamilton Poisson-nal $h = 0{,}191$ $m = 2{,}305$ $m^2 = 5{,}213$

$A = 4{,}577$ $\mathcal{E} = 0{,}979$

mh 2,305
0,191
2305
20745
2305
mh = 0,440,255

5,213
0,0959
46917
26045
46917
0,4999,067

$5{,}68 / 2{,}2885 = 0{,}4029 = \frac{A}{r}\, 0{,}0959\, m^2$
2272
1650
1136
5140

4,577
0,44
18308
18308
2,01388

219
219
1971
219
4381
41,7961
4,80

0,4292
2,014
17168
4292
85840

~~2,305~~
~~880~~
~~1,185~~

$5{,}68 \,/\, 0{,}8644{,}088 \,/\, 0{,}1522$ $0{,}4292\, \frac{A}{r}\, mh$
568
2964
~~2840~~
2840
1240
1136
1048

5,213
880
6,093
1324
4,669

0,096
429
799
1324

4,735
0,979
42615
33145
42615
$5{,}68 \,/\, 4{,}5355{,}65 = 0{,}7987 = \frac{a^2}{r}\mathcal{E}$
3976
5595
5112
4830
4444
3860

$a = 3{,}828 \quad a^2 = 14{,}65$

Mérésem magasságok vizben

Nagy csőkútmélysége 39,4 — 824 / 824 — [illegible] 20,5

$h = 18{,}7 \quad \zeta = 0{,}07 \qquad z = 4{,}13 \quad z^2 = 17{,}06 \quad \frac{z}{h} = 0{,}225$

$a'^2 = 14{,}91$

Ex pipetta $h = 15 \quad \zeta = 0{,}07$ — 843 — $z = 4{,}28 \quad z^2 = 18{,}32 \quad \frac{z}{h} = 0{,}285$

$a'^2 = 1{,}547$ ~~[illegible]~~

$$a = \frac{z}{1 + \frac{1}{3}\frac{a}{h} + \frac{1}{9}\frac{a^2}{h^2}}$$ formulával $a'' = 3{,}919 \quad a''^2 = 15{,}36$

Kis csőkútban 27,3 — 846 / 847 — $z = 4{,}46 \quad z^2 = 19{,}89$

$h = 11{,}7. \quad \zeta = 0{,}23 \qquad \frac{z}{h} = 0{,}373$

Számítva

$$a'^2 = \frac{z^2 + \frac{z^3}{h}(\sqrt{2}-1) - \frac{1}{3h}z^3(2\sqrt{2}-1)}{1 + \frac{z}{h}(\sqrt{2}-1)}$$

$z = h + \zeta \qquad a'^2 = 16{,}3$

4-ik számú vírcső

$t = 21^{\circ} C$ (F)

769
768
770
770

769 ; $z = 3{,}845$

$2x = 15{\cdot}53$

$x = 7{\cdot}76.$

$a = 3{,}826$ $\frac{x}{a} = 2{,}028$ $\frac{z}{a} = 1{,}0049$

$\frac{x}{a} = 2{,}028$ értékhez [illegible] megfelel $\frac{z}{a} = 1{,}0025$

3-ik számú vírcső.

$a = 3{,}826$ $\frac{x}{a} = 1{,}887$ $\frac{z}{a} = 0{,}9841$

753
753
753
753

$z = \frac{753}{200}$

$z = 3{,}765$

$2x = 14{\cdot}44$

$x = 7{,}22$

$\frac{x}{a} = 1{,}887$ értékkel [illegible] $\frac{z'}{a} = 0{,}9838$

---

2 ik számú vírcső.

$a = 3{,}826$

$\frac{x}{a} =$ ~~[illegible]~~ 1,658 $\frac{z}{a} = 0{,}9481$

725
726
725
726

725,5 ; 3,6275

$2x = 12{\cdot}69$

x 6,345

$\frac{x}{a} = 1{,}658$ értékkel [illegible]

$\frac{z}{a} = 0{,}9449$

[illegible] 22° akkor $a = 3{,}823$ [illegible]

$\frac{x}{a} =$ ~~0,9489~~ 1,660 $\frac{z}{a} = 0{,}9489$

$\frac{x}{a} = 1{,}660$ [illegible] $\frac{z}{a} = 0{,}9457$

1-ső számú vírcső.

$a = 3{,}826$

707
707
707
707

$z = 3{,}535$

$2x = 11{\cdot}75$

$x = 5{,}875$

$\frac{x}{a} =$ ~~[illegible]~~ 1,535 $\frac{z}{a} = 0{,}9213$

$\frac{x}{a} = 1{,}535$ értékkel [illegible] $\frac{z}{a}$ 0,9185

5-ik vírcső

temp. 22° C (F)

$a = 3{,}823$

760
760
760
760

$z = 3{,}80$

$2x = 14{\cdot}64.$

$x = 7{,}32$

$\frac{x}{a} = 1{,}915$ $\frac{z}{a} = 0{,}9940$

$\frac{x}{a} = 1{,}915$ értékkel [illegible] $\frac{z}{a} = 0{,}9877.$

Vasárnapi tábla

Ülteendő tábla

Vizsgálatok összefoglalása az 1885 Oktober 1-ig tett 14 [illegible]

			ξ_0'
1) Vastag Kalics bor	$u' = 8{,}2$ m.m.	—	707
2) Külső ... 18,3	$u' = 8{,}5$	—	713
3) Kiss-bor K... = 22,8	$u' = 9{,}5\frac{1}{2}$	—	734
4) Kis bor K... = 18,7	$u' = 10{,}8$	—	741
5) Kis bor K... = 27,3	$u' = 11{,}7$	—	747
6) Kis bor K... = 29,2	$u' = 12{,}9$	—	747
7) Régi bor K... = 28,?	$u' = 13{,}5$	—	745
8) Expripella	$u' = 15{,}0$ 16,4	—	742 739
9) Régi ... bor 39,8	$u' = 18{,}7$	—	734.

Ha találjuk egy bor ξ értékét egy más bor ξ' értékét kapjuk a fenti ξ_0 értékekkel a [illegible]. $\frac{\xi'}{\xi} = \frac{\xi_0'}{\xi_0}$

A végre a értékei

$a_{20} = 3{,}829$

$a_{21} = 3{,}826$

$a_{22} = 3{,}823$

$a_{23} = 3{,}820$

$a_{24} = 3{,}816$

$a_{25} = 3{,}812$

$a_{26} = 3{,}808$

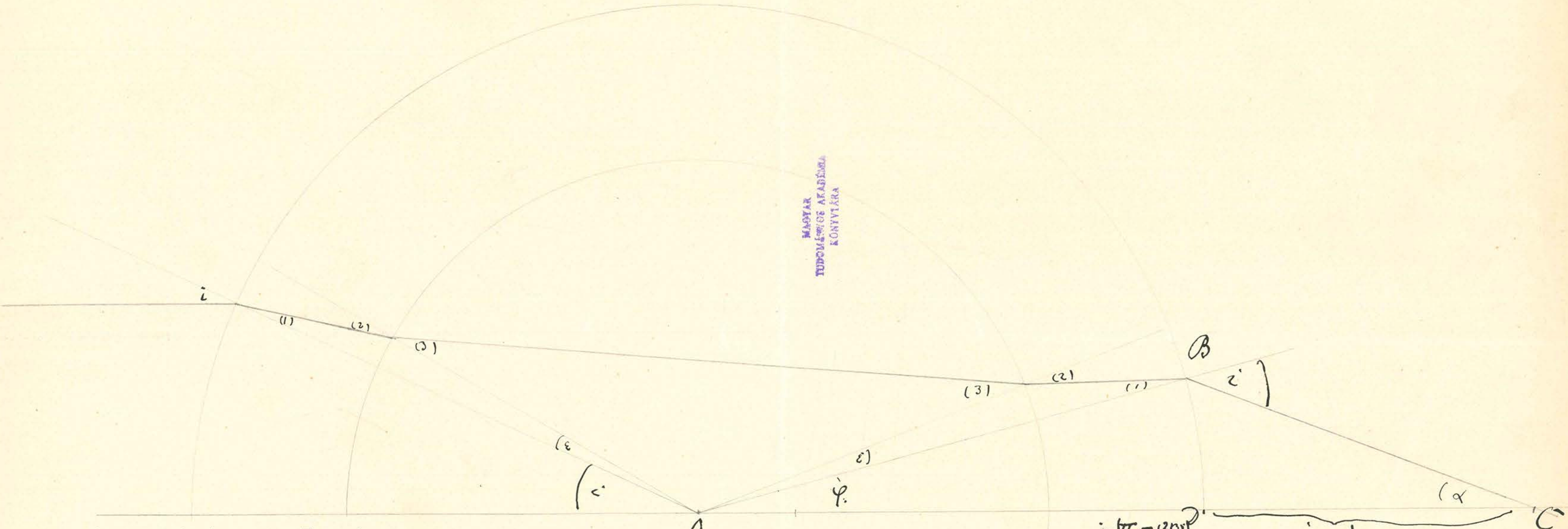
1,2

512
256
1408

772
408
252

105 | 1,5 | 6

0,006



A törésmutató levegőből üvegbe = n

üvegből folyadékba = m

$(1) = \frac{i}{n}$ $\quad (2) = \frac{i}{n}\left(1+\frac{d}{r}\right) = \frac{d+r}{r}\,\frac{i}{n}$

$(3) = \frac{(2)}{m} =$ ~~α~~

OBC háromszögben $\varphi = \pi - 2(3) - 2(\varepsilon) - i$

$\varphi = \pi + 2(3) - 2((2)-(1)) - i$

$\alpha = i - \varphi$ $\quad r =$ a belső sugár $\quad l = CD$

$d =$ a vastagság

akkor:

$(r+d)\varphi = l(i-\varphi)$

~~$(r+d+l)$~~ $(r+d+l)\frac{\varphi}{i} = l$

$$n' = \frac{d+r}{\frac{d}{n} + \frac{r}{2}\left(\frac{l}{D}+1\right)}$$

Avrundning af Siffrorna 1886 Juli 5

I

x = 5,675   z = 2,93

$\frac{x}{z} = 1,937$

$\frac{x}{z}$	$\frac{z}{a}$
1,960	0,9800
1,957	0,9908

$\frac{z}{a} = 0,9875$ a = 2,957

II   x = 2,500   z = 2,02

202 / 250 / 1,238

$\frac{x}{z} = 1,238$

$\frac{z}{a} = 0,65$ a =

0,65 / 2,02 = 3,1

$\frac{x}{z} = 1,204$ — 0,6101

$\frac{x}{z} = 1,280$ — 0,6924

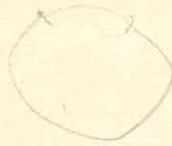
a = 2,96 $a^2 = 8,762$ $\frac{a^2}{2} = 4,381$

l = 2,786   λ = 2,99

$\lambda^2 = 8,94$

$\mu^2 = 24,90$

2,99



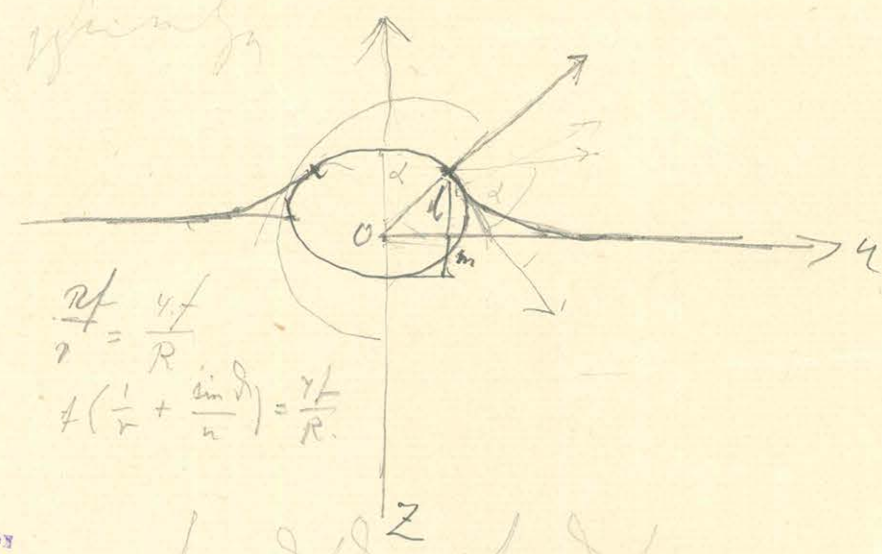
1) [illegible]

2) [illegible]

3) [illegible]

4) [illegible]

$\frac{4f}{r} = km + \frac{2f}{\rho}$



$\frac{2f}{\rho} = \frac{4f}{R}$

$f\left(\frac{1}{r} + \frac{\sin\vartheta}{u}\right) = \frac{4f}{R}$

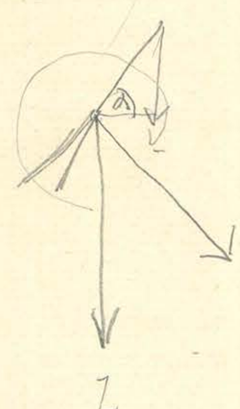
$4\pi u f$

$d(u f \sin\vartheta) = u f \cos\vartheta \, d\vartheta + f \sin\vartheta \, du$

$f \sin\vartheta \, du$

$\frac{d\vartheta}{\rho}$

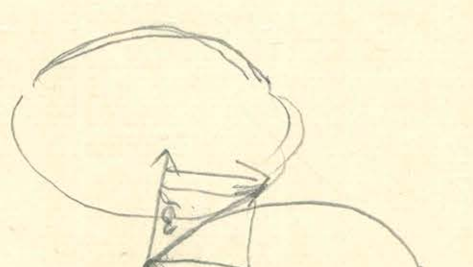
α



$\frac{\sin\vartheta}{u}$ $\quad$ ~~$\vartheta = \pi + \alpha$~~

$2f \, 2\pi u \sin\alpha$

$\frac{\sin\vartheta}{u} \mp \frac{d\vartheta}{du}$



$-\frac{\sin\alpha}{u} - \frac{1}{b} = \frac{2z}{a^2} = -\frac{2h}{a^2}$

$\frac{\sin\alpha}{u} - \frac{1}{K} = -\frac{2l}{a^2}$

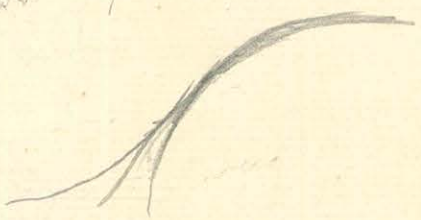
$\rho \, d\varepsilon = \delta u \cos\varepsilon$

$\delta\varepsilon = \frac{\delta u \cos\varepsilon}{\rho}$

$\rho \, d\varepsilon \cos\varepsilon = \delta u$

$\frac{4f}{r} = \sigma m + \frac{2f}{\rho}$

$\frac{u}{b} - \frac{u}{K} = \frac{2u}{r} - 2\sin\alpha$



Anyag neve	Kritikus hőfok Celsius fokokban t	Kritikus hőfok Absolut nullponttól T	Kritikus nyomás Atmosphaerákban p	Az Aetherénél 0° Celsiusnak megfelelő hőfok t'	megfelelő α	kö felületi $\frac{\alpha}{\alpha_e}$ α_e = éther	$\sqrt[3]{\frac{pT^2}{p_e T_e^2}}$ $p_e T_e$ (Ether)	$\sqrt[3]{\frac{p^2 T^4}{p_e^2 T_e}}$	$\frac{p}{p_e}$	Ether = 0 nak megfelelő $-\frac{da}{dt}$	$-\frac{\alpha}{\alpha_e}\frac{T_e}{T}\frac{d\alpha_e}{dt}$	megfelelő kö felületi a^2	$-\frac{da^2}{dt}$	
Éther	190	463	37	0	1,986	1	1	1	1	0,0122	0,0122	5,396	0,0260	
Chloroform	260	533	55	43	2,439	1,228	1,25	1,37	1,48	0,0141	0,0130	3,367	0,0146	
Szén kéneg	271	544	75	49,6	2,931	1,486	1,38	1,69	2,05	0,0166	0,0154	4,796	0,0200	
Alkohol	234	507	63	27,6	2,209	1,112	1,27	1,46	1,7	0,0088	0,0124	5,673	0,0158	
Víz	412	685	277	133,2	5,260	2,605	2,54	4,3	7,5	0,0229	0,0215 ~~[illegible]~~	11,531	0,0309	
Szénsav	31	304	73	−94 Szénsav −10 Ether 128	α −10 foknál ~~4,5~~ 0,5945 α−94 = 1,77	0,903	0,9475	1,37	1,97	+5° Cel. körül 0,0140	0,0137	*) −10 foknál 1,269	0,0249	*) Ethernél α_{40} 1,570 lennének egyenletben foggalkozni $\frac{da}{dt}$ = 0,0100 értekbeli
Kénessav	155	428	79	−21 SO_2 +19 Ether 40	α = 19° nál α = 2,150	1,43	1,22	1,61	2,14	körülbelül a T = 155 fok vezemen 0,0158	0,0184	19 foknál 3,144	0,0216	
Benzol	281	Saját észlelésem 554	50	53,6	2,258	1,137	1,246	1,297	1,351	0,0108	0,0115	5,331	0,0182	
Ecetsavas Aethyl	240	513	43	29,5	2,123	1,069	1,125	1,142	1,162	0,0092	0,0117	4,64	0,0146	
Ecetsavas Methyl	230	503	58	23,6	2,397	1,207	1,227	1,387	1,567	0,0115	0,0133	5,157	0,0180	
Hangyasavas Aethyl	230	503	49	23,6	2,255	1,135	1,160	1,233	1,324	0,0109	0,0127	4,918	0,0170	
Chloraethyl	183	456	53	−4,1	2,177	1,096	1,115	1,264	1,432	0,0113	0,0135	4,701	0,0186	
					Középérték – fenti 11 adatból	1,310	1,318	1,646	2,152	0,0133	0,0140			