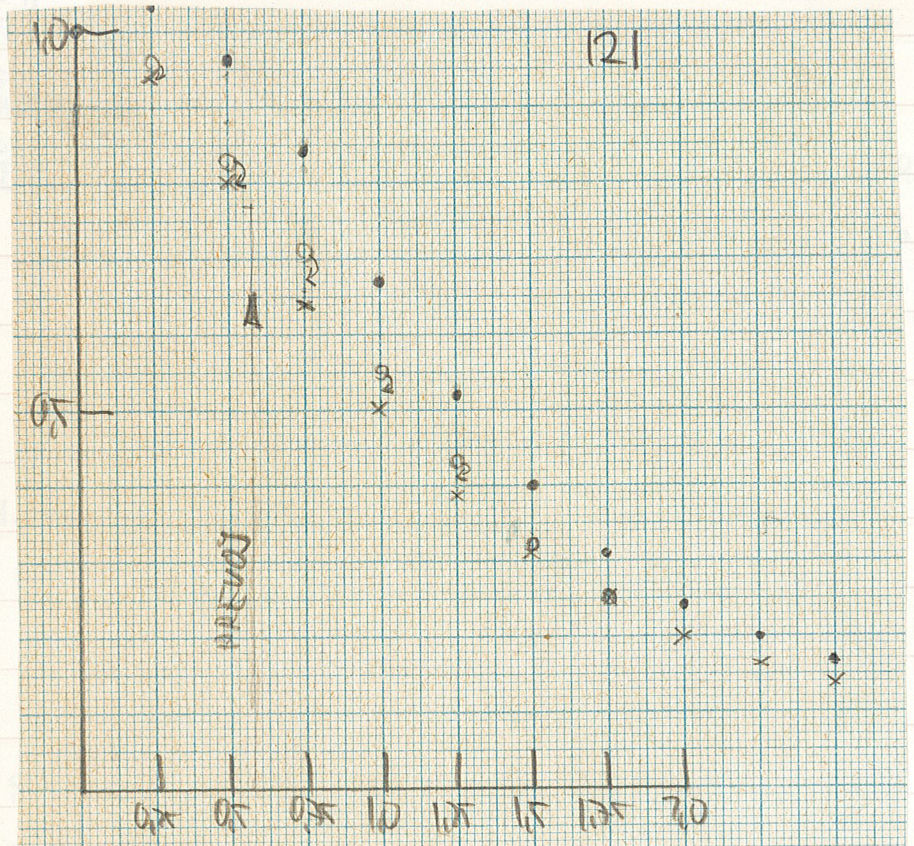
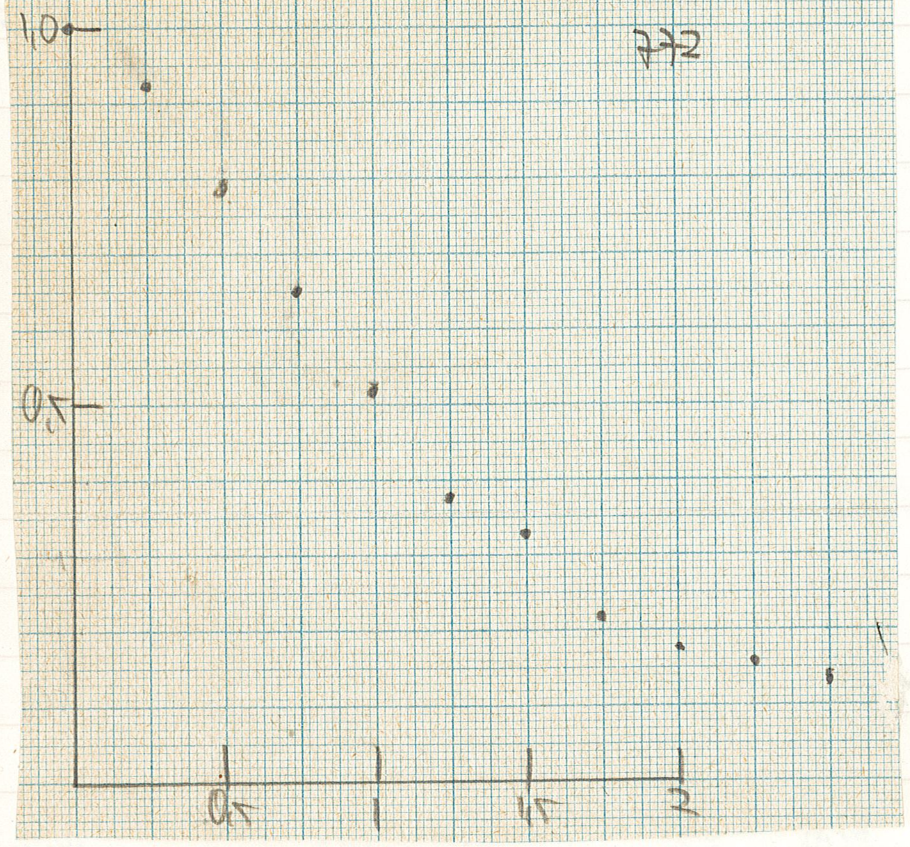
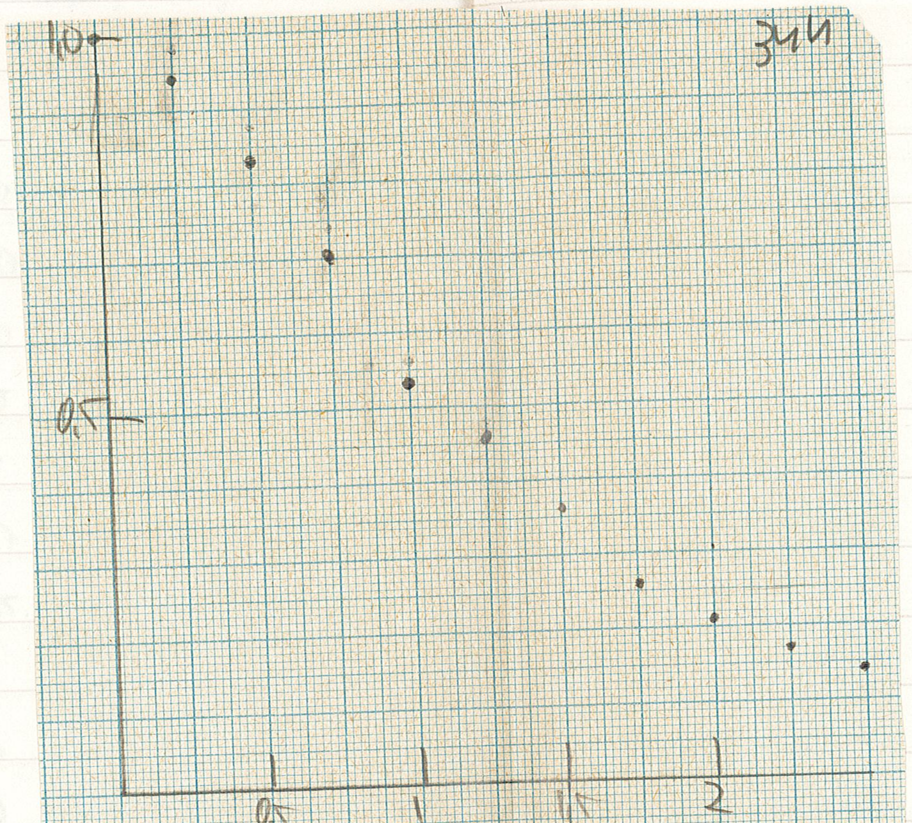
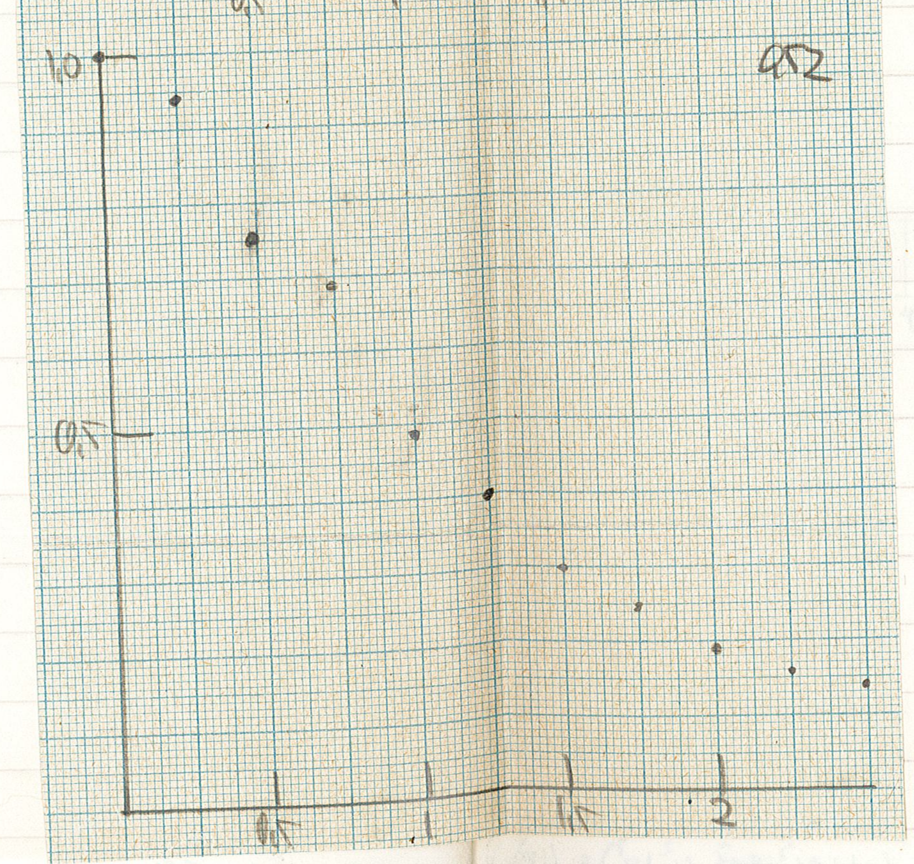
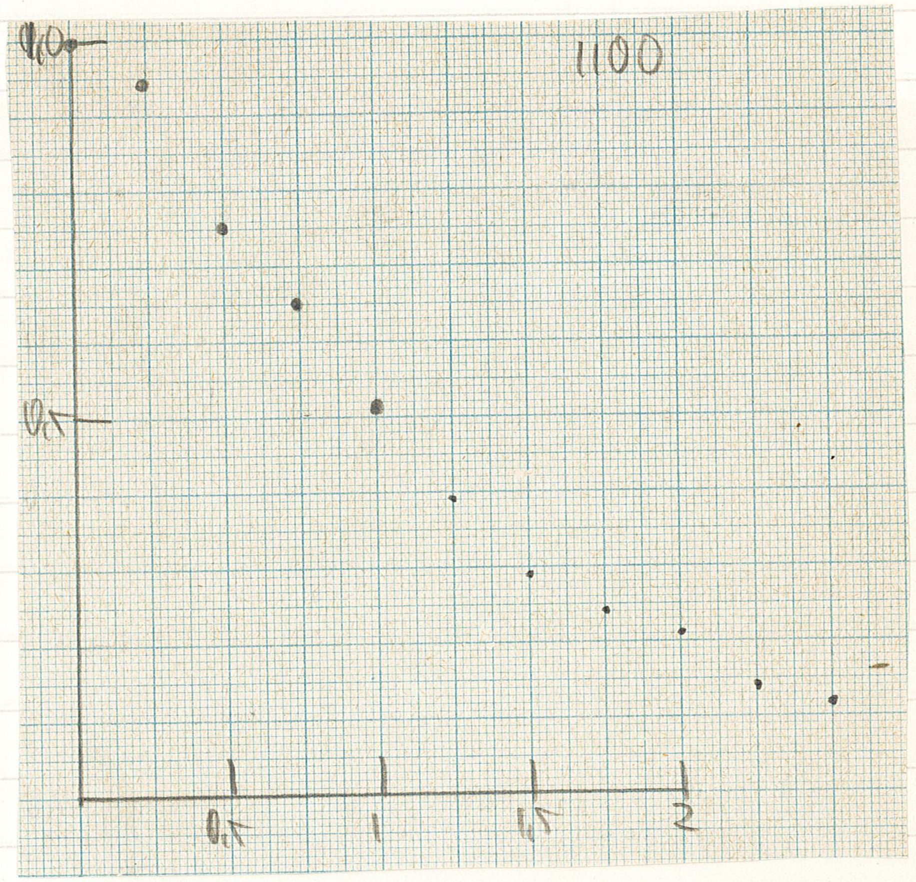
M̊, d = 1 mm

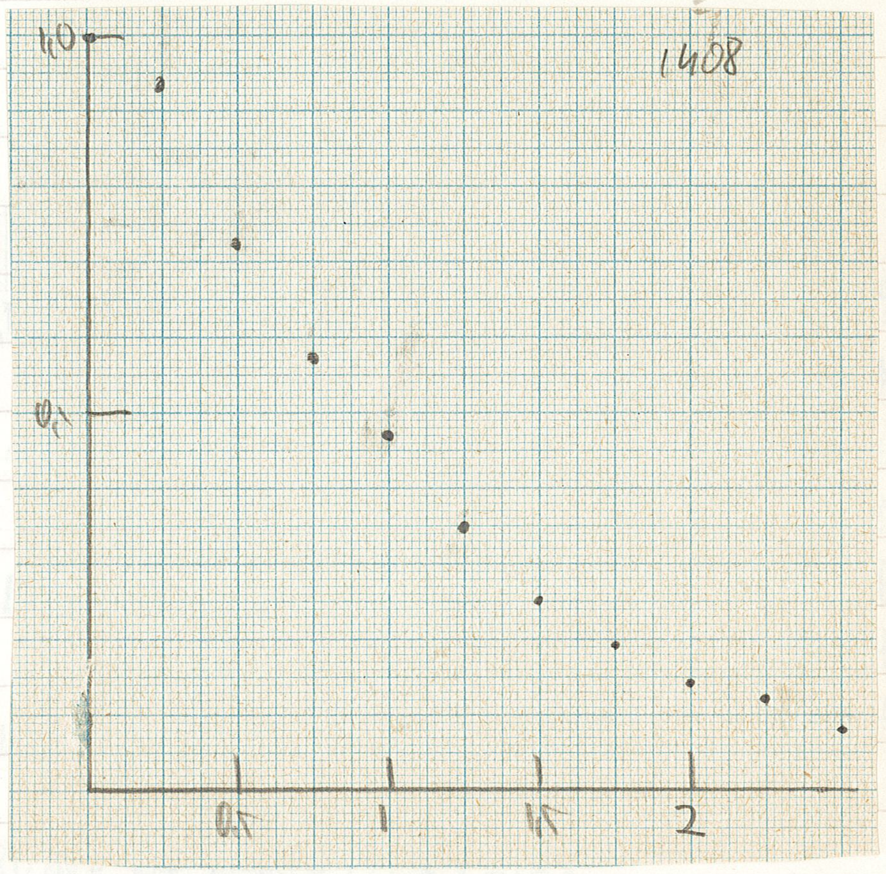

121
1,0
0,5
0,25 0,5 0,75 1,0 1,25 1,5 1,75 2,0

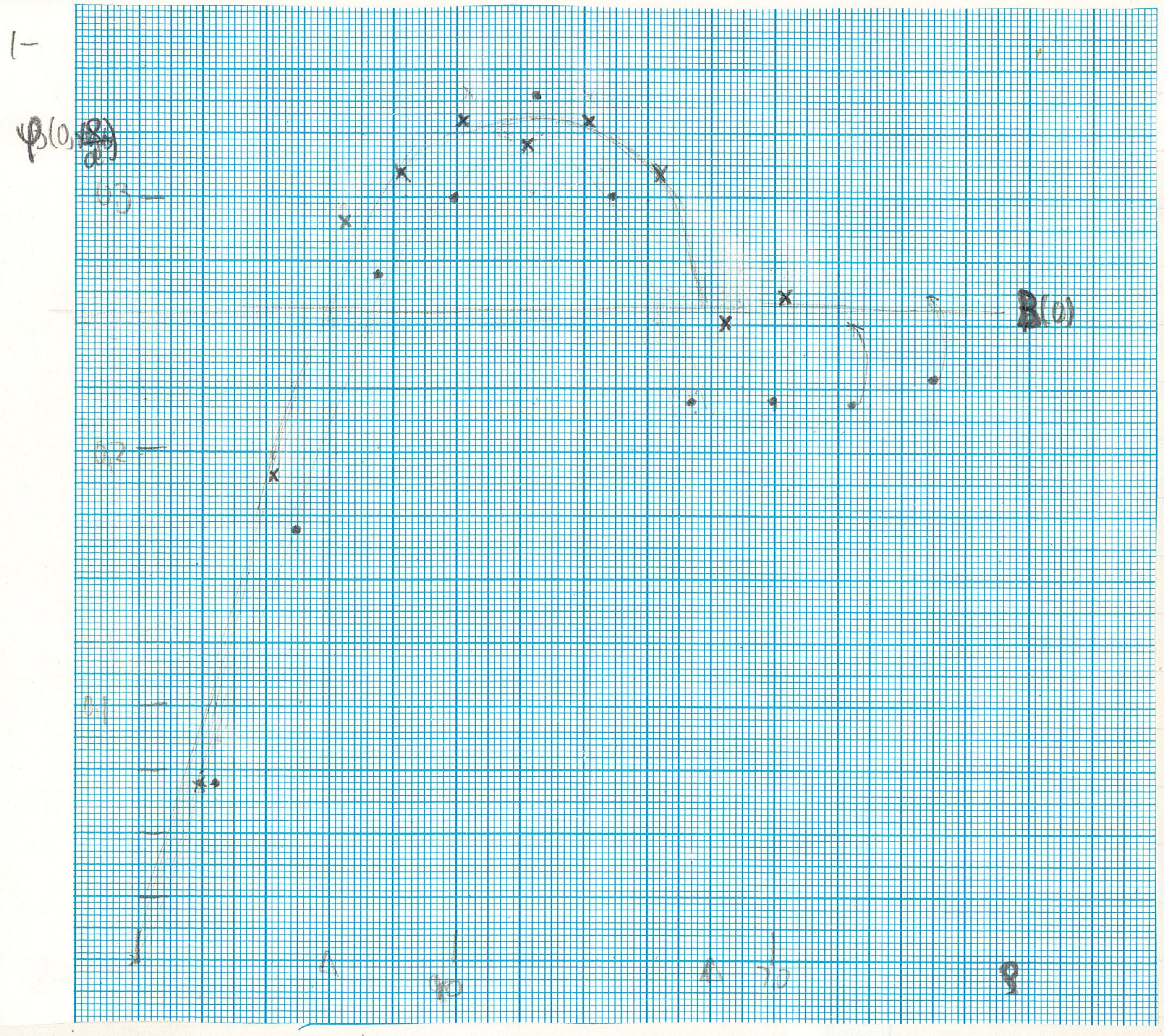

772
1,0
0,5
0,5 1 1,5 2

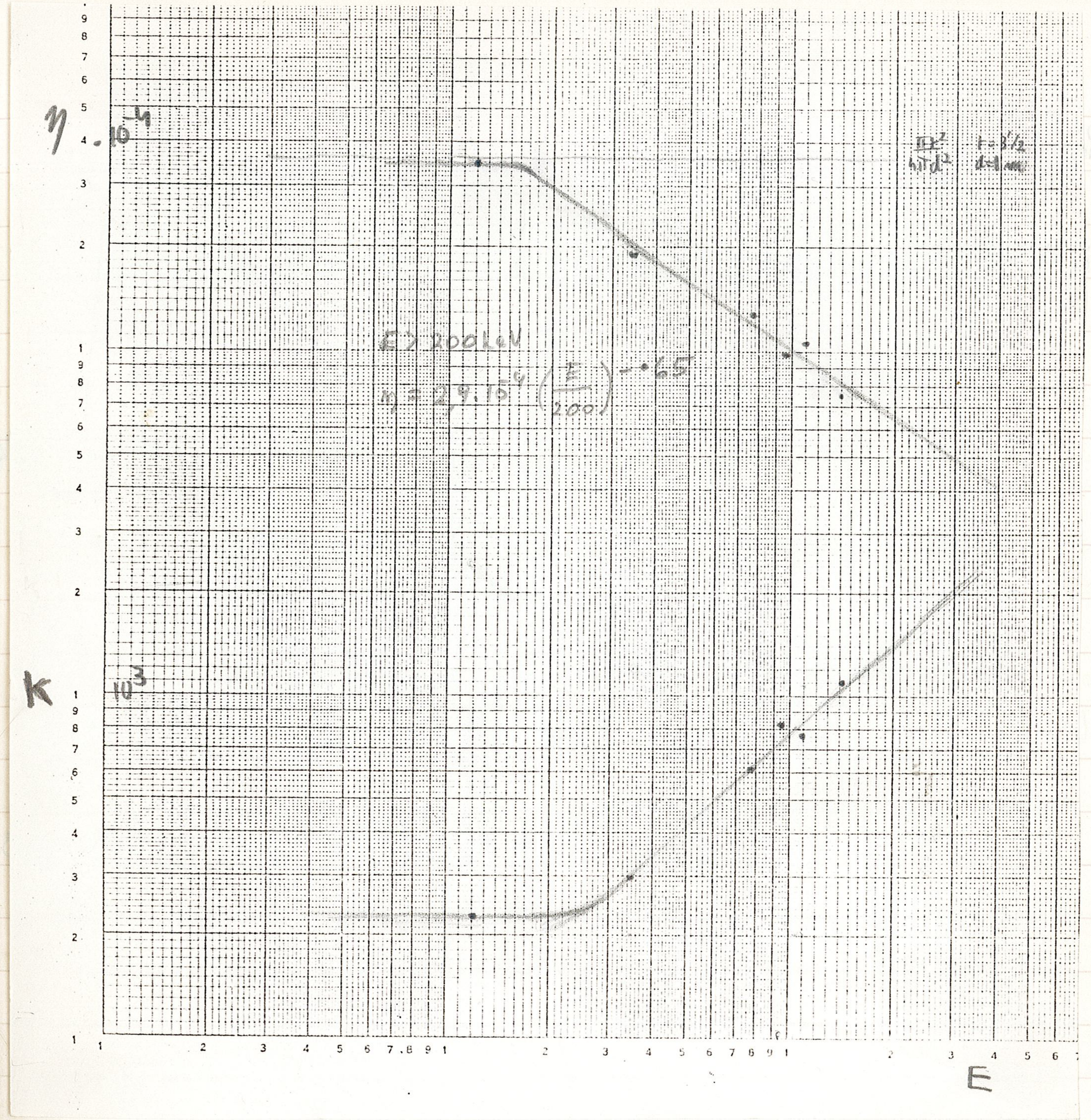

344
1,0
0,5
0,5 1 1,5 2


952
1,0
0,5
0,5 1 1,5 2


1100
1,0
0,5
0,5 1 1,5 2


1408
1,0
0,5
0,5 1 1,5 2





$B(0) = 1{,}24$ $\quad \varphi(0) = -1 \quad \varphi(0{,}6) = 0 \quad \varphi(1{,}8) = 0,$

$A(40) = 0{,}24$

$A(121) = 0{,}24$

$A(344) = 0{,}12$

$A(273) = 0$

$A(110) = 0$

$A(1408) = 0$

$$\varphi = -\frac{1}{0{,}6^2 \cdot 1{,}8^2}\left(\frac{\rho^2}{a^2} - 0{,}6^2\right)\left(\frac{\rho^2}{a^2} - 1{,}8^2\right) =$$

$$= \frac{-1}{0{,}6^2 \cdot 1{,}8^2}\,\frac{\rho^4}{a^2} + \frac{0{,}6^2 + 1{,}8^2}{0{,}6^2 \cdot 1{,}8^2}\,\frac{\rho^2}{a^2} - 1$$

$$\Phi(a,R) = \frac{-1}{4\cdot 0{,}6^2 \cdot 1{,}8^2}\cdot 1{,}8^4 + \frac{1}{2}\left(\frac{0{,}6^2 + 1{,}8^2}{0{,}6^2 \cdot 1{,}8^2} + 1\right)\cdot 1{,}8^2 + \frac{-1 - 0{,}6^2 - 1{,}8^2 - 0{,}6^2 \cdot 1{,}8^2}{0{,}6^2 \cdot 1{,}8^2}\ln(1{,}8^2+1)$$

$$= \frac{1}{0{,}6^2 \cdot 1{,}8^2}\left(-\frac{1}{4}\cdot 1{,}8^4 + \frac{0{,}6^2 \cdot 1{,}8^2}{2} + \frac{1{,}8^4}{2} + \frac{0{,}6^2 \cdot 1{,}8^2 \cdot 1{,}8^2}{2} - (+1 + 0{,}6^2 + 1{,}8^2 + 0{,}6^2 \cdot 1{,}8^2)\ln(1{,}8^2+1)\right)$$

$$= \frac{1}{0{,}6^2 \cdot 1{,}8^2}\left(\frac{0{,}6^2 \cdot 1{,}8^2}{2} + \frac{1{,}8^4}{4} + \frac{0{,}6^2 \cdot 1{,}8^4}{2} - 5{,}77\ln|4{,}24|\right) = \frac{1}{0{,}6^2 \cdot 1{,}8^2}\left(\frac{0{,}6^2 \cdot 1{,}8^2}{2} + \frac{1{,}8^4}{2}\cdot(0{,}6^2 + \tfrac{1}{2}) - \frac{5{,}77 \cdot 1{,}44}{2}\right) = \frac{1}{1{,}17}\left(\frac{1{,}17}{2} + \frac{9{,}03}{2} - \frac{8{,}31}{2}\right) = 0{,}81$$

$$\varphi\left(\frac{s^2}{a^2}\right) = -\frac{1}{0{,}6^2 \cdot 1{,}8^2}\left(\frac{s^2}{a^2} - 0{,}6^2\right)\left(\frac{s^2}{a^2} - 1{,}8^2\right) = -\frac{1}{0{,}6^2 \cdot 1{,}8^2}\left(\frac{s^2}{a^2}\right)^2 + \frac{0{,}6^2 + 1{,}8^2}{0{,}6^2 \cdot 1{,}8^2}\left(\frac{s}{a}\right)^2 - 1$$

$$\Psi(u) = \varphi(u^2 - 1) = A' \frac{u^4}{a^4} + B' \frac{u^2}{a^2} + C'$$

$$A' = A = -\frac{1}{0{,}6^2 \cdot 1{,}8^2} = \underline{\underline{-0{,}86}} \qquad B' = -2A + B = \frac{-2}{0{,}6^2 \cdot 1{,}8^2} + \frac{0{,}6^2 + 1{,}8^2}{0{,}6^2 \cdot 1{,}8^2} = \frac{-2 + 0{,}6^2 + 1{,}8^2}{0{,}6^2 \cdot 1{,}8^2} = \underline{\underline{1{,}37}}$$

$$C' = A - B + C = -\frac{1}{0{,}6^2 \cdot 1{,}8^2} - \frac{0{,}6^2 + 1{,}8^2}{0{,}6^2 \cdot 1{,}8^2} - 1 = -\frac{+1 + 0{,}6^2 + 1{,}8^2 + 1{,}8^2 \cdot 0{,}6^2}{0{,}6^2 \cdot 1{,}8^2}$$

$$\underline{\underline{= -4{,}94}}$$

KOLIČINA, KI NASTOPA V POVRŠINSKI KONTAMINACIJI:

$$\sum_{1}^{K} \frac{P_n}{2n}\left[\left(\frac{R^2}{a^2} + 1\right)^n - 1\right] = \frac{1{,}37}{2} \cdot \left[(1{,}8^2)\right] + \frac{-0{,}86}{2 \cdot 2}\left[(1{,}8^2 + 1)^2 - 1\right] = 2{,}22 + (-3{,}65) = -1{,}43$$

$k = 2 \quad P_1 = B' \quad P_2 = A', \ \frac{R}{a} = 1{,}8$