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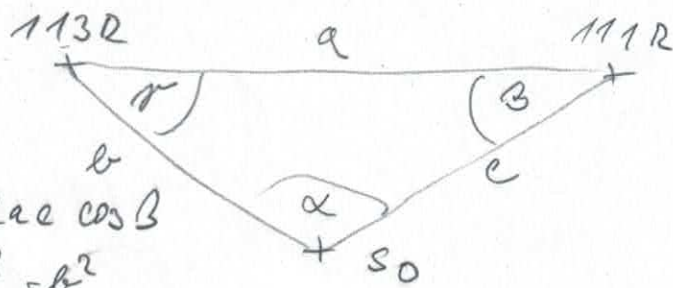
ARITHMETIKA VÝPOČET STANOVISK SĚK SO-S3

1) PŘEVZATÍ 4 MĚŘIČKŮ BODY

1132 763 363,31 1053 138,31 358,05 m

1112 763 978,82 1053 203,19 358,90 m

2) PROTÍNAJÍCÍ UPŘED ŽE VZDÁL PRO ZSÍSTĚNÍ SO



$$b^2 = c^2 + a^2 - 2ac \cos \beta$$

$$\cos \beta = \frac{c^2 + a^2 - b^2}{2ac}$$

$$a = \sqrt{(15,51^2 + 4,88^2)} = \underline{16,260 \text{ m}}$$

b) $S_m = 11,91 \text{ m}$ - ZPRŮMĚNO PŘÍSLŮBŮ

$$z' = \frac{94,4810 + 94,4832 + 94,4880 + 94,4752}{4} = 94,4818$$

$$z = z' - a \sin \left(\frac{v_2 - v_1}{s_n} \sin z' \right) = 94,4818 - \left(\frac{1143 - 1,3}{11,91} \cdot \sin 94,4818 \right)$$

$$= 94,4818 - 0,6923 = 93,7895 \text{ ‰}$$

$$b = 11,91 \cdot \sin 93,7895 = \underline{11,853 \text{ m}}$$

c) $S_m = 10,62$ - ZPRŮMĚNO PŘÍSLŮBŮ 10,58 m

$$z' = \frac{88,6070 + 88,5864 + 88,5714 + 88,5734}{4} = 88,5846 \text{ ‰}$$

$$z = 88,5846 - a \sin \left(\frac{1143 - 1,3}{10,62} \sin 88,5846 \right) =$$

$$= 88,5846 - 0,7668 = 87,8178 \text{ ‰}$$

$$c = 10,62 \cdot \sin 87,8178 = \underline{10,426 \text{ m}}$$

$$b = a \cos \frac{10,426^2 + 16,26^2 - 11,853^2}{2 \cdot 16,26 \cdot 10,426} = \underline{51,8718} \text{ m}$$

$$\sigma_{M12 \rightarrow 1132} = a \cdot k_f \frac{y_{1132} - y_{M12}}{x_{1132} - x_{M12}} = a \cdot k_f \frac{-15,51}{-4,88} = \underline{280,5940} \text{ m}$$

$$\sigma_{M12 \rightarrow S_0} = \sigma_{M12 \rightarrow 1132} - b = 280,5940 - 51,8718 = \underline{228,7222} \text{ m}$$

$$y_{S_0} = y_{M12} + 10,426 \cdot \sin 228,7222 = y_{M12} - 4,55 = \underline{763\ 974,27} \text{ m}$$

$$x_{S_0} = x_{M12} + 10,426 \cdot \cos 228,7222 = x_{M12} - 9,38 = \underline{1053\ 133,81} \text{ m}$$

3, KONTROLA ÚHLU $M12 \rightarrow S_0 \rightarrow 1132$

$$\cos \alpha = \frac{c^2 + b^2 - a^2}{2bc} = \frac{10,426^2 + 11,853^2 - 16,26^2}{2 \cdot 11,853 \cdot 10,426}$$

$$\alpha = 104,2727^\circ$$

\approx MĚŘENÍ: $103,92^\circ > \underline{0,35^\circ}$

4, VÍŠKA STANOVISKA $S_0 \approx 1132$

$$H_{S_0} = H_{1132} - 11,91 \cdot \cos 93,7880 = H_{1132} - 1,16 = \underline{356,89} \text{ m m. m.}$$

5) URČENÍ S_0 Z ÚHLU 1112 1132 S_0
A VZDÁLENOSTI, ZPŘEDÁNÍ PÁSMEM

$$N = 284,14 - 239,96 = 44,18 > 0$$

$$84,14 - 39,99 = 44,18$$

$$\sqrt{113} S_0 = \sqrt{113} 1112 + \gamma = 80,5940 + 44,18 = \underline{124,774}^\circ$$

$$z' = 112,44$$

$$z = 112,44 - \arcsin\left(\frac{1,19}{11,91} \sin 112,44\right) = 112,44 - 6,25 =$$

$$= \underline{106,19}^\circ$$

$$b = 11,91 \cdot \sin 106,19 = \underline{11,854} \text{ m}$$

$$y_{S_0} = y_{1132} + 11,854 \cdot \sin 124,77 = y_{1132} + 10,97 =$$

$$= \underline{763\ 974,28} \text{ m}$$

$$x_{S_0} = x_{1132} + 11,854 \cos 124,77 = x_{1132} + 4,50 =$$

$$= \underline{1053\ 193,81} \text{ m}$$

$$H_{S_0} = H_{1132} \sin \cos z = 358,05 + 11,91 \cdot \cos 106,19 =$$

$$358,05 \cdot 1,16 = \underline{356,89} \text{ m}$$

6) URČENÍ S_1 DOLÁDKU Z S_0 (DĚLKA Z MĚŘENÍ PÁSMEM)

$$\sqrt{S_0 S_1} = \sqrt{S_0 1132} + \varnothing (A_{S_1} - A_{1132}) =$$

$$= (379,9430 + 380,0048 + 380,0714 + 380,0034) / 4 -$$

$$- (192,3226 + 192,3218 + 192,3280 + 192,3366) / 4$$

$$= 324,774 + 380,0071 - 192,3276 = \underline{112,4535}^\circ$$

$$z' = (99,2572 + 99,2562 + 99,2508 + 99,2514) / 4 = 99,2539^\circ$$

$$z = 99,2539 - \arcsin\left(\frac{1,43 - 1,13}{20,66} \sin 99,2539\right) =$$

$$= 99,2539 - 0,4006 = \underline{98,8533}^\circ$$

$$S_0 = 20,66 \cdot \sin 98,8533 = \underline{20,66} \text{ m}$$

$$y_{S1} = y_{S0} + 20,66 \cdot \sin 112,4535 = y_{S0} + 20,27$$

$$= \underline{763\ 994,55\ m}$$

$$x_{S1} = x_{S0} + 20,66 \cos 112,4235 = x_{S0} - 4,01$$

$$= \underline{1053\ 189,80\ m}$$

$$H_{S1} = H_{S0} + 20,66 \cdot \cos 98,8533 = 356,89 + 0,37$$

$$= \underline{357,26\ m}$$

7, URČENÍ S_2 POLÁRNĚ Z S_0 (DĚLKA ZE STROJE)

$$\sqrt{S_0 S_2} = \sqrt{S_0} \cdot \text{MSR} + \theta (A_{S_2} - A_{\text{MSR}}) =$$

$$= 324,774 + (130,2104 + 130,1822 + 130,2140 + 130,1898) / 4$$

$$- 192,3276 = 324,774 + 130,1931 - 192,3276 =$$

$$= \underline{262,6455\ m}$$

$$z = (92,9052 + 92,9054 + 92,9044 + 92,9016) / 4 = \underline{92,9041}$$

$$S_m = (65,05 + 65,04 + 65,07 + 65,09) / 4 = \underline{65,06\ m}$$

$$S_0 = 65,06 \cdot \sin 92,9041 = \underline{64,66\ m}$$

$$y_{S2} = y_{S0} + 64,66 \sin 262,6455 = y_{S0} - 53,84 =$$

$$= \underline{763\ 920,44\ m}$$

$$x_{S2} = x_{S0} + 64,66 \cos 262,6455 = x_{S0} - 35,80 =$$

$$= \underline{1053\ 158,01\ m}$$

$$H_{S2} = H_{S0} + 65,06 \cos 92,9041 + 1,43 - 1,3 =$$

$$= 356,89 + 7,23 + 1,43 - 1,3 = \underline{364,25\ m}$$

8) URČÍ S₃ DOLÍRNĚ Z S₀ (DĚLKA ZE STRAŽE)

$$\begin{aligned} \sqrt{S_0 S_3} &= \sqrt{S_0} \cdot 1132 + \theta (A_{S_3} - A_{1132}) = \\ &= 324,774 + (180,5588 + 180,5598 + 180,6090 + 180,5862) / 4 - 192,3276 \\ &= 324,774 + 180,5785 - 192,3276 = \underline{313,0249} \end{aligned}$$

$$z = (92,6352 + 92,6246 + 92,6246 + 92,6238) / 4 = \underline{92,6270} \text{ }^\circ$$

$$S_m = (62,47 + 62,45 + 62,50 + 62,50) / 4 = \underline{62,48 \text{ m}}$$

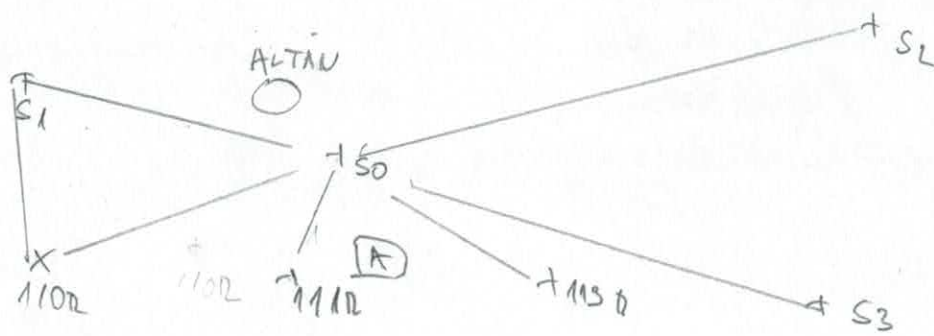
$$S_0 = 62,48 \cdot \sin 92,6270 = \underline{62,06 \text{ m}}$$

$$\begin{aligned} y_{S_3} &= y_{S_0} + 62,06 \cdot \sin 313,0249 = y_{S_0} - 60,77 \\ &= \underline{763 \ 913,51 \text{ m}} \end{aligned}$$

$$\begin{aligned} x_{S_3} &= x_{S_0} + 62,06 \cdot \cos 313,0249 = x_{S_0} + 12,61 \\ &= \underline{1053 \ 206,42 \text{ m}} \end{aligned}$$

$$\begin{aligned} H_{S_3} &= H_{S_0} + 62,48 \cdot \cos 92,6270 + 1,43 - 1,3 = \\ &= 356,89 + 7,22 + 1,43 - 1,3 = \underline{364,24 \text{ m}} \end{aligned}$$

	y	x	H	$\sqrt{S_0 \rightarrow}$
S ₀	763 974,28 m	1053 193,81 m	356,89 m	
S ₁	763 934,55 m	1053 189,80 m	357,26 m	112,4535
S ₂	763 920,44 m	1053 158,01 m	364,25 m	262,64558
S ₃	763 913,51 m	1053 206,42 m	364,24 m	313,0249 ²



KONTROLA S₁ → 1102

$$\begin{aligned} \sqrt{S_{1102}} &= \sqrt{S_{1S_0}} + \emptyset A_{1102} - \emptyset A_{S_0} = \\ &= 312,4535 + (130,72 + 130,69)12 - (47,27 + 47,22)12 \\ &= 312,4535 + 130,705 - 47,245 = \underline{395,91} \end{aligned}$$

$$z' = (104,31 + 104,31) / 2 = \underline{104,31}^{\circ}$$

$$\begin{aligned} z &= 104,31 - \arcsin \left(\frac{1,44}{17,76} \cdot \sin 104,31 \right) = 104,31 - 5,16 = \\ &= \underline{99,15}^{\circ} \end{aligned}$$

$$S_0 = 17,76 \cdot \sin 99,15 = \underline{17,76 \text{ m}}$$

$$\begin{aligned} y'_{1102} &= y_{S_1} + 17,76 \cdot \sin 395,91 = x_{S_1} + 1,14 = \\ &= \underline{763 \quad 993,41 \text{ m}} \end{aligned}$$

$$\begin{aligned} x_{1102} &= x_{S_1} + 17,76 \cdot \cos 395,91 = x_{S_1} + 17,72 = \\ &= \underline{1053 \quad 207,52 \text{ m}} \end{aligned}$$

$$\begin{aligned} H_{1102} &= H_{S_1} + 17,76 \cdot \cos 99,15 = 357,26 + 0,24 = \\ &= \underline{357,50 \text{ m}} \end{aligned}$$

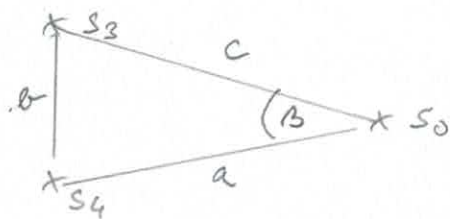
KONTROLA WEB: D_T = 0,01m D_X = 0,06m D_H = 0,01m

SUPER!

VYPOČÍTAL JAKUB KEDHAT

- A -

AZUKA VÍPOČET S₄ ZE STANOUCK S₀, S₃



A, VZDAL S₄, S₀

$$z = (106,8538 + 106,8730 + 106,8384 + 106,8464 + 106,8528) / 5 = 106,8533^\circ$$

$$s = (43,36 + 43,39 + 43,39 + 43,37 + 43,33) / 5 = 43,38 \text{ m}$$

$$s_0 = \sin(z) \cdot s = \underline{43,13 \text{ m}} = a$$

B, VZDAL S₄, S₃

$$z = (96,0280 + 96,0154) / 2 = 96,0217^\circ$$

$$s = (43,27 + 43,27) / 2 = 43,27 \text{ m}$$

$$s_0 = \sin(z) \cdot s = \underline{43,19 \text{ m}} = b$$

C, VZDAL S₀, S₁

$$\sqrt{(763974,28 - 763913,51)^2 + (1053193,81 - 1053206,42)^2}$$

$$= \underline{62,06 \text{ m}} = e$$

4, COSINOVÁ VĚTA $\cos B = \frac{e^2 + a^2 - b^2}{2ac}$

$$\cos B = \frac{62,06^2 + 43,13^2 - 43,19^2}{2 \cdot 43,13 \cdot 62,06} ; \angle B = 48,9671^\circ$$

$$\sqrt{s_0 s_3} = a \cdot y \frac{y_{s_3} - y_{s_0}}{x_{s_3} - x_{s_0}} = a \cdot y \frac{913,51 - 974,28}{206,42 - 193,81} = 313,0252^\circ$$

$$\sqrt{s_0 s_4} = \sqrt{s_0 s_3} - B = \underline{264,0581^\circ}$$

$$y_{s_4} = y_{s_0} + 43,13 \cdot \sin 264,0581 = 763974,28 - 36,44 = \underline{763937,84}$$

$$x_{s_4} = x_{s_0} + 43,13 \cdot \cos 264,0581 = 1053193,81 - 23,08 = \underline{1053170,73}$$

H = z BODU S₀

$$H_{s_4} = z_{s_0} - 43,38 \cdot \cos(106,8533) + 1,3 - 1,23$$

$$= 356,85 + 4,55 + 1,30 - 1,23 = \underline{361,51 \text{ m}}$$

$$H_{s_4} \approx \text{BODU } S_3 \text{ (KONTROLA)} = 364,24 - 43,27 \cdot \cos(96,0217) + 1,3 - 1,23 = 361,60$$

□ 3cm

$$S_4 \quad Y = 763937,84 \quad X = 1053170,73 \quad H = 361,55 \text{ m}$$

VÍPOČET JAKUB KERAAT

a) S₂ → P₁

$$z = (93,7106 + 93,7156) / 2 = 93,7131$$

$$s = (39,59 + 37,60) / 2 = 37,60$$

$$s_0 = \sin(93,7131) \cdot 37,60 = 37,42 \text{ m}$$

$$\sqrt{s_{2P_1}} = \sqrt{s_{0S_2} + 200 - V_{S_0} + V_{P_1}}$$

$$\begin{aligned} \sqrt{s_{2P_1}} &= 262,6455 + 200 - (138,3736 + 138,3820) / 2 + (336,6224 + 336,5870) / 2 \\ &= 62,6455 - 138,3778 + 336,6047 = 260,8724 \end{aligned}$$

$$Y_{P_1} = Y_{S_2} + 37,42 \cdot \sin 260,8724 =$$

$$763\ 920,44 - 30,57 = \underline{763\ 889,87 \text{ m}}$$

$$X_{P_1} = X_{S_2} + 37,42 \cdot \cos 260,8724 =$$

$$1053\ 158,01 - 21,58 = \underline{1053\ 136,43 \text{ m}}$$

$$H_{P_1} = H_{S_2} + \cos(93,7131) \cdot 37,60 + 1,37 - 1,3 =$$

$$363,25 + 3,71 + 1,37 - 1,3 = \underline{367,03 \text{ m}}$$

b) P₁ → Z₁₀₃

$$z = (103,8152 + 103,8192) / 2 = 103,8162$$

$$s = (18,99 + 18,85) / 2 = 18,92$$

$$s_0 = \sin(103,8162) \cdot 18,92 = 19,93 \text{ m}$$

$$\sqrt{s_{1Z_{103}}} = \sqrt{s_{2P_1} + 200 - V_{S_2} + V_{Z_{103}}}$$

$$= 60,8724 - (147,7624 + 147,7654) / 2 + (361,9338 + 361,8808) / 2$$

$$= 60,8724 - 147,7589 + 361,9073 = 275,0208$$

$$Y_{Z_{103}} = 763\ 889,87 + \sin(275,0208) \cdot 19,93 = \underline{763\ 871,45 \text{ m}}$$

$$X_{Z_{103}} = 1053\ 136,43 + \cos(275,0208) \cdot 19,93 = \underline{1053\ 128,81 \text{ m}}$$

$$H_{Z_{103}} = 367,03 + \cos(103,8162) \cdot 18,92 + 1,32 - 2,0 = \underline{365,15 \text{ m}}$$

Z₁₀₃: Y = 763 871,45 m X = 1053 128,81 m H = 365,15 m
 PVO ŽIVTU - 0,2 m