

POROČILO

Na strehi fakultete smo izmerili dve poševni razdalji proti točkama, na katerih sta postavljeni tarči. Za redukcijo smo izmerili tudi zenitno razdaljo, višino inštrumenta, temperaturo in tlak.

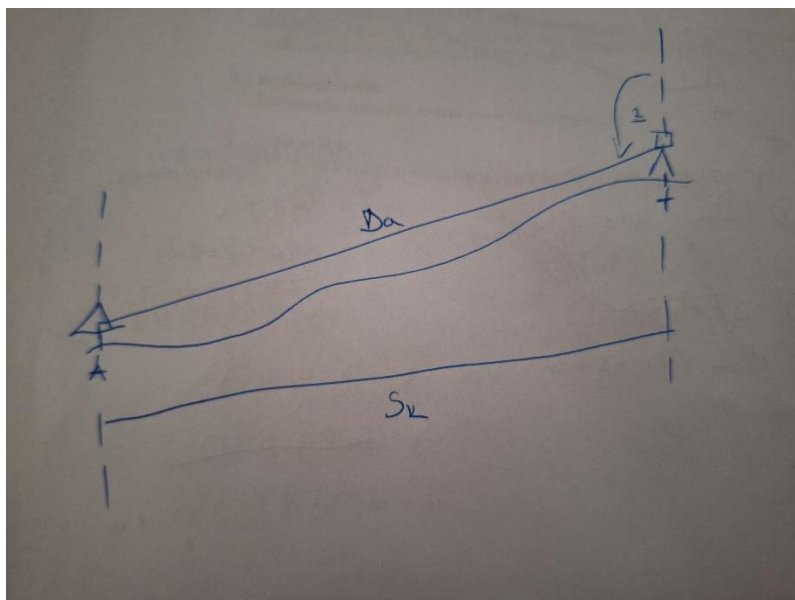
Dani podatki, merjene količine:

A(460887,728; 100896,247) – parkirišče

B(461122,013; 100796,161) – rimski zid

		A	B
izmerjena dolžina	D_a	132,101 m	139,682m
zenitna razdalja	z_a	100°35'37"	99°26'44"
temperatura	T	2°	
tlak	p	915 ml	
nadmorska višina stojišča	H		
višina inštrumenta	i	0,24 m	0,24 m
višina reflektorja	l	1,6 m	1,6 m

Naša naloga je, da reduciramo izmerjeni dolžini proti obema točkama.



A.

METEOROLOŠKI POPRAVKI

$$D = D_0 \cdot \text{km} \cdot (1 + 17 \cdot 10^{-6})$$

$$D = 132,101 \cdot (1 + 17 \cdot 10^{-6})$$

$$D = 132,1032457 \text{ m}$$

GEOMETRIČNI POPRAVKI

$$S'' = D + k_a$$

$$S'' = 132,1032457 + 0,0187$$

$$S'' = 132,1219457 \text{ m}$$

$$S_k = S'' \cdot \sin(z)$$

$$S_k = S'' \cdot \sin(100^\circ 35' 37'')$$

$$S_k = 129,8700401 \text{ m}$$

PROJEKCIJSKI POPRAVKI

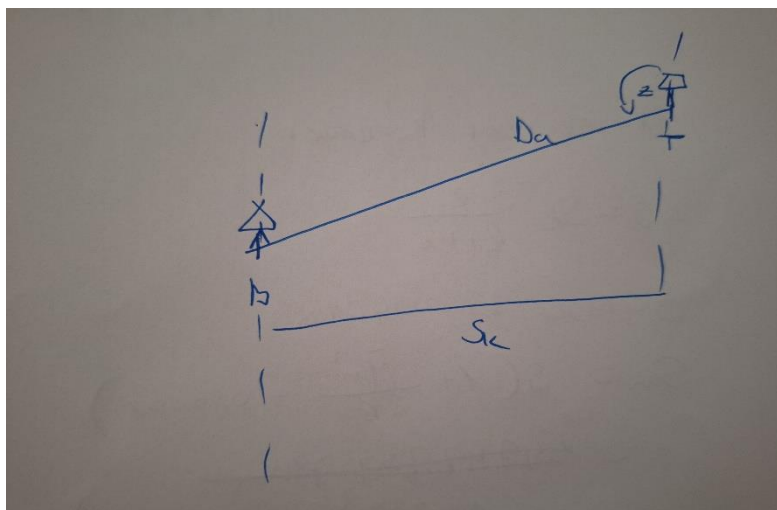
$$S = S_k \cdot \frac{R}{R + H_A}$$

$$S = 129,862599 \text{ m} \quad \checkmark$$

$$S_m = S \left(1 + \frac{\gamma_m^2}{2R^2} - 0,0001 \right)$$

$$S_m = S \left(1 + \frac{(-38995,1295^2)}{2 \cdot R^2} - 0,0001 \right)$$

$$S_m = 129,8471754 \text{ m} \quad \times$$



B

METEOROLOŠKI POPRAVKI

$$D = D_a \cdot km$$

$$D = 139,682 \cdot (1117 \cdot 10^{-6})$$

$$D = 139,6843746m$$

GEOMETRIČNI POPRAVKI

$$S'' = D + K_a$$

$$S'' = 139,6843746 + 0,0187$$

$$S'' = 139,7030746m$$

$$S_k = S'' \cdot \sin(z)$$

$$S_k = 139,7030746m \cdot \sin(99^\circ 26' 44'')$$

$$S_k = 137,8089789m$$

PROJEKCIJSKI POPRAVKI

$$S = S_k \cdot \frac{R}{R + H_a}$$

$$S = 137,801083 \checkmark$$

$$S_m = S \left(1 + \frac{\gamma_m^2}{2 \cdot R^2} - 0,0001 \right)$$

$$S_m = S \left(1 + \frac{-38995,1295^2}{2 \cdot R^2} - 0,0001 \right)$$

$$S_m = 137,7847208m \times$$

Zadnji postopek, ki ga moramo sami opraviti je ločni presek, s pomočjo 1. dela vaj bom izračunala ločni presek, da bom določila stojišče točke T oziroma stojišče instrumenta s katerim smo merili.

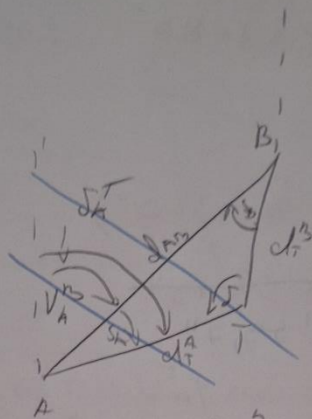
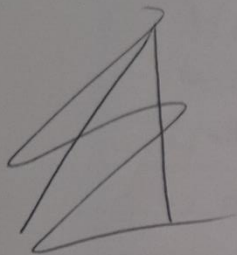
LOCOMI PRESEK

DANO: A (460887, 728; 100896, 247)

B (461122, 013; 100796, 161)

Merjino: d_{AT}^A, d_{AT}^B

ISCIENO: T (e_T, n_T)



$$d_{AT}^B = \sqrt{(\Delta e_A^B)^2 + (\Delta n_A^B)^2}$$

$$d_{AT}^B = \sqrt{254,767872^2 + 100,086^2}$$

$$V_A^B = \arctan \frac{\Delta e_A^B}{\Delta n_A^B}$$

$$= -56,86734067^\circ$$

$$V_A^B = 113,1320593^\circ$$

$$d_{AT}^B = d_{AT}^A^2 + d_{AT}^B^2 - 2d_{AT}^A \cdot d_{AT}^B \cdot \cos S_A$$

$$S_A = \arccos \frac{d_{AT}^A^2 + d_{AT}^B^2 - d_{AT}^T^2}{2 \cdot d_{AT}^A \cdot d_{AT}^B} = \arccos 20,9838092^\circ$$

$$S_A = \arccos 20,9838092^\circ$$

$$d_{AT}^2 = d_{AB}^2 + d_{BT}^2 - 2d_{AB} \cdot d_{BT} \cdot \cos J_B$$

$$J_B = \arccos \frac{d_{AB}^2 + d_{BT}^2 - d_{AT}^2}{2 \cdot d_{AB} \cdot d_{BT}}$$

$$J_B = 19,79578089^\circ$$

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$$\varphi_A^T = \sqrt{A} \cdot J_A (1360^\circ)$$

$$\varphi_A^T = \frac{13426157,13''}{92^\circ 8' 53,7''}$$

$$\Delta e_A^T = d_{AT} \cdot \sin \varphi_A^T$$

$$\Delta e_A^T = \frac{34,83973598 \text{ m}}{132,0081565''}$$

$$\Delta n_A^T = d_{AT} \cdot \cos \varphi_A^T$$

$$\Delta n_A^T = \frac{-51,95204402 \text{ m}}{-4,951835195''}$$

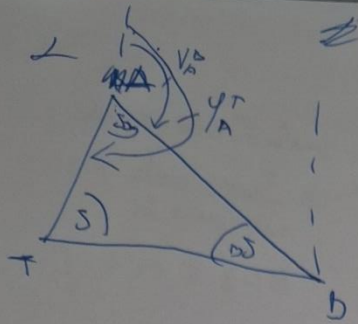
$$e_T^1 = e_A + \Delta e_A^T$$

$$= \frac{460982,5677 \text{ m}}{461019,7362 \text{ m}}$$

$$h_T^1 = h_A + \Delta h_A^T$$

$$= \frac{100804,29 \text{ m}}{100891,2552 \text{ m}}$$

$$100891,2552 \text{ m}$$



$$d_{AB} = 254,767872 \text{ m}$$

$$V_A^B = 113,1320553^\circ$$

$$\delta_A = 20,9838092^\circ$$

$$\delta_B = 19,79578099^\circ$$

$$\varphi_A^T = V_A^B + \delta_A$$

$$\varphi_A^T = 134^\circ 6' 57,15''$$

$$\Delta e_A^T = 94,83973598^\circ$$

$$\Delta n_A^T = -91,35704802^\circ$$

$$e_T^1 = e_A + \Delta e_A^T$$

$$= 460982,5677 \text{ m}$$

$$n_T^1 = n_A + \Delta n_A^T$$

$$= 100804,29 \text{ m}$$

Ker nisem bila čisto prepričana ali točka T leži na levi ali na desni strani sem izračunala obe.

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