Geodäsie: Prof. Reppchen

Messtrupp: 7 (Thomas Jurk)
Studiengruppe: 06/062/02

Einzelpunktbestimmung durch Vorwärtseinschneiden

Daten (Trupp 7):

gegeben :

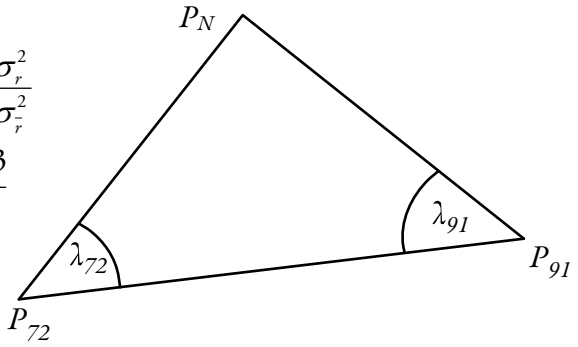
$$P_{72} = (5411405,53; 5656180,63)$$
$$P_{91} = (5411361,69; 5656192,51)$$

gemessen :

$$\lambda_{P72} = 75{,}8277\,gon$$
$$\lambda_{P91} = 67{,}5544\,gon$$

Vorbetrachtung:

$$n = \frac{\sigma_r^2}{\sigma_{\bar{r}}^2}$$
$$n \approx 3$$



Richtungswinkel:

$$\angle P_{72}P_{91} = \arctan\left(\frac{\Delta y_{P72\,P92}}{\Delta x_{P72\,P92}}\right) + 400\,gon$$
$$\underline{\angle P_{72}P_{91} = 316{,}8469\ gon}$$

$$\angle P_{91}P_{72} = \angle P_{72}P_{91} - 200\,gon$$
$$\underline{\angle P_{91}P_{72} = 116{,}8469\ gon}$$

$$\angle P_{72}P_N = \angle P_{72}P_{91} - \lambda_{P72}$$
$$\underline{\angle P_{72}P_N = 241{,}0192\ gon}$$

$$\angle P_{91}P_N = \angle P_{72}P_{91} - \lambda_{P91}$$
$$\underline{\angle P_{91}P_N = 184{,}4013\ gon}$$

Neupunktbestimmung :

$$\overline{P_{72}P_{91}} = \sqrt{\Delta x_{P72\,P91}{}^2 + \Delta y_{P72\,P91}{}^2}$$
$$\underline{\overline{P_{72}P_{91}} = 45{,}42\ m}$$

$$\Delta x_{P72\,PN} = \frac{\overline{P_{72}P_{91}} * \sin(\lambda_{91})}{\sin(\lambda_{91} + \lambda_{72})} \cdot \cos(\angle P_{72}P_N)$$
$$\underline{\Delta x_{P72\,PN} = -40{,}82\ m}$$

$$\Delta y_{P72\,PN} = \frac{\overline{P_{72}P_{91}} * \sin(\lambda_{91})}{\sin(\lambda_{91} + \lambda_{72})} \cdot \sin(\angle P_{72}P_N)$$
$$\underline{\Delta y_{P72\,PN} = -30{,}67\ m}$$

$$\Delta x_{P91\,PN} = -52{,}70\ m$$
$$\Delta y_{P91\,PN} = 13{,}18\ m$$

$$\underline{P_{N(P72)} = (5411374,87; 5656139,82)}$$

$$\underline{P_{N(P91)} = (5411374,87; 5656139,82)}$$