

## Polygonový pořad oboustranně orientovaný a oboustranně připojený

V oboustranně připojeném (b.č. 501, 505) a oboustranně orientovaném (b. č. 500) polygonovém pořadu byly měřeny levostranné vrcholové úhly a vodorovné vzdálenosti. Vypočtete souřadnice bodů polyg. pořadu.

D: 501 [14 995,71; 74 990,96]  
505 [14 962,92; 74 823,85]  
500 [15 066,70; 74 946,64]

M:  $\omega_{501} = 60,8891^g$        $s_{501,502} = 35,94$  m  
 $\omega_{502} = 220,7153^g$        $s_{502,503} = 45,52$  m  
 $\omega_{503} = 183,3814^g$        $s_{503,504} = 40,29$  m  
 $\omega_{504} = 227,8190^g$        $s_{504,505} = 52,01$  m  
 $\omega_{505} = 16,3617^g$

U: 502 [ ? ; ? ], 503 [ ? ; ? ], 504 [ ? ; ? ]

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Pořad má pět vrcholů =>  $n = 5$

1.  $\sigma_{501,500} = 135,5301^g$  (viz Směrník)

$\sigma_{505,500}^{\text{sour}} = 44,6712^g$  (viz Směrník)

$$\sigma_{505,500}^{\text{mer}} = \sigma_{501,500} + \sum_{i=501}^{505} \omega_i - (n-1) * 2R = 135,5301 + 309,1665 = 44,6966^g$$

$$o_{\omega} = \sigma_{505,500}^{\text{sour}} - \sigma_{505,500}^{\text{mer}} = 44,6712 - 44,6966 = -0,0254^g$$

2.  $|o_{\omega}| \leq \Delta\omega = 100\sqrt{n+3} \Rightarrow 254^{\text{cc}} \leq 282^{\text{cc}} \Rightarrow o_{\omega}$  vyhovuje mezní odchylce

$$3. \quad \delta_{\omega} = \frac{\mathbf{O}_{\omega}}{\mathbf{n}} = -50,8^{\text{cc}}$$

$$\begin{aligned} \omega_i &= \omega_i^{\text{puv}} + \delta_{\omega} \Rightarrow \omega_{501} = 60,8891 - 0,0051 = 60,8840^{\text{g}} \\ \omega_{502} &= 220,7153 - 0,0051 = 220,7102^{\text{g}} \\ \omega_{503} &= 183,3814 - 0,0051 = 183,3763^{\text{g}} \\ \omega_{504} &= 227,8190 - 0,0051 = 227,8139^{\text{g}} \\ \omega_{505} &= 16,3617 - 0,0050 = 16,3567^{\text{g}} \end{aligned}$$

$$4. \quad \sigma_{501,502} = \sigma_{501,500} + \omega_{501} = 196,4141^{\text{g}}$$

$$\sigma_{502,503} = \sigma_{501,502} - 2R + \omega_{502} = 217,1243^{\text{g}}$$

$$\sigma_{503,504} = \sigma_{502,503} - 2R + \omega_{503} = 200,5006^{\text{g}}$$

$$\sigma_{504,505} = \sigma_{503,504} - 2R + \omega_{504} = 228,3145^{\text{g}}$$

$$\sigma_{505,501} = \sigma_{504,505} - 2R + \omega_{505} = 44,6712^{\text{g}} \quad (\text{kontrola: musí vyjít stejně jako } \sigma_{505,500}^{\text{sour}})$$

$$5. \quad \Delta y_{501,502} = s_{501,502} * \sin \sigma_{501,502} = +2,02 \text{ m} \quad \Delta x_{501,502} = s_{501,502} * \cos \sigma_{501,502} = -35,88 \text{ m}$$

$$\Delta y_{502,503} = s_{502,503} * \sin \sigma_{502,503} = -12,10 \text{ m} \quad \Delta x_{502,503} = s_{502,503} * \cos \sigma_{502,503} = -43,88 \text{ m}$$

$$\Delta y_{503,504} = \dots = -0,32 \text{ m} \quad \Delta x_{503,504} = \dots = -40,29 \text{ m}$$

$$\Delta y_{504,505} = \dots = -22,38 \text{ m} \quad \Delta x_{504,505} = \dots = -46,95 \text{ m}$$

$$6. \quad o_y = \Delta y_{501,505}^{\text{sour}} - \sum_{i=501}^{505} \Delta y_{i,i+1} = -32,79 + 32,78 = -0,01 \text{ m}$$

$$o_x = \Delta x_{501,505}^{\text{sour}} - \sum_{i=501}^{505} \Delta x_{i,i+1} = -167,11 + 167,00 = -0,11 \text{ m}$$

$$o_p = \sqrt{o_y^2 + o_x^2} = 0,11 \text{ m}$$

$$o_p \leq \Delta p = 0,10 + 0,005\sqrt{\sum s} \Rightarrow 0,11 \text{ m} \leq 0,16 \text{ m} \Rightarrow o_p \text{ vyhovuje mezní odchylce}$$

$$7. \quad \delta y_{i,i+1} = \left| \Delta y_{i,i+1} \right| \frac{o_y}{\sum_{i=501}^{505} \left| \Delta y_{i,i+1} \right|} \Rightarrow \delta y_{501,502} = 2,02 \frac{-0,01}{36,82} = -0,00$$

$$\delta y_{502,503} = 12,10 \frac{-0,01}{36,82} = -0,00$$

$$\delta y_{503,504} = \dots = -0,00$$

$$\delta y_{504,505} = \dots = -0,01$$

$$\delta x_{i,i+1} = \left| \Delta x_{i,i+1} \right| \frac{o_x}{\sum_{i=501}^{505} \left| \Delta x_{i,i+1} \right|} \Rightarrow \delta x_{501,502} = 35,88 \frac{-0,11}{167,00} = -0,02$$

$$\delta y_{502,503} = \dots = -0,03$$

$$\delta y_{503,504} = \dots = -0,03$$

$$\delta y_{504,505} = \dots = -0,03$$

$$8. \quad \Delta y_{501,502} = \Delta y_{501,502} + \delta y_{501,502} = 2,02 - 0,00 = +2,02 \text{ m}$$

$$\Delta y_{502,503} = \dots = -12,10 \text{ m}$$

$$\Delta y_{503,504} = \dots = -0,32 \text{ m}$$

$$\Delta y_{504,505} = \dots = -22,39 \text{ m}$$

$$\Delta x_{501,502} = \dots = -35,90 \text{ m}$$

$$\Delta x_{502,503} = \dots = -43,91 \text{ m}$$

$$\Delta x_{503,504} = \dots = -40,32 \text{ m}$$

$$\Delta x_{504,505} = \dots = -46,98 \text{ m}$$

9.  $Y_{502} = Y_{501} + \Delta y_{501,502} = \mathbf{14\ 997,73\ m}$

$Y_{503} = Y_{502} + \Delta y_{502,503} = \mathbf{14\ 985,63\ m}$

$Y_{504} = Y_{503} + \Delta y_{503,504} = \mathbf{14\ 985,31\ m}$

$(Y_{505} = Y_{504} + \Delta y_{504,505} = \mathbf{14\ 962,92\ m})$

$X_{502} = X_{501} + \Delta x_{501,502} = \mathbf{74\ 955,06\ m}$

$X_{503} = X_{502} + \Delta x_{502,503} = \mathbf{74\ 911,15\ m}$

$X_{504} = X_{503} + \Delta x_{503,504} = \mathbf{74\ 870,83\ m}$

$X_{505} = X_{504} + \Delta x_{504,505} = \mathbf{74\ 823,85\ m})$

– kontrola: musí vyjít stejně jako zadané souřadnice b. 505