

7P - Transformation mit differenzieller Drehmatrix

Formeln (2.6) / (2.7)

$$\vec{X}' = d\vec{x} + (1+m) R \vec{X}$$

geg: $w_x = -3,8''$ $dx = +400m$
 $w_y = +2,1''$ $dy = -250m$ $m = +2,5 \text{ ppm}$
 $w_z = -5,3''$ $dz = -90m$ $= +0,0000025$

Punkt P $\begin{pmatrix} 4083 & 364,416 \text{ m} \\ 1183 & 322,147 \text{ m} \\ 4739 & 225,329 \text{ m} \end{pmatrix}$

ges: P'

$$R = \begin{pmatrix} 1 & w_z & -w_y \\ -w_z & 1 & w_x \\ w_y & -w_x & 1 \end{pmatrix} = \begin{pmatrix} 1 & -0,000025695 & -0,000010181 \\ 0,000025695 & 1 & -0,000018423 \\ 0,000010181 & 0,000018423 & 1 \end{pmatrix}$$

$$P' = \begin{pmatrix} 400 + 4083295,967 \\ -250 + 1183342,716 \\ -90 + 4739300,550 \end{pmatrix} = \begin{pmatrix} 4083695,967 \text{ m} \\ 1183092,716 \text{ m} \\ 4739210,550 \text{ m} \end{pmatrix}$$