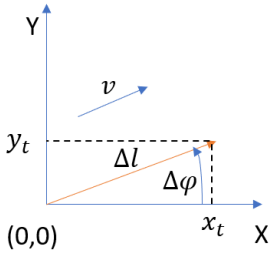
(1.)



1. $\Delta\varphi_n = \omega_n * t_n$
2. $\Delta l_n = v_n * t_n$
3. $\Delta x(\varphi_n) = \Delta l_n * \cos(\Delta\varphi_n)$
4. $\Delta y(\varphi_n) = \Delta l_n * \sin(\Delta\varphi_n)$

(2.)

$$a \cdot x_0^2 + b \cdot x_0 + c = y_0$$

$$\dots$$

$$a \cdot x_n^2 + b \cdot x_n + c = y_n$$

$$A = \begin{vmatrix} x_0^2 & x_0 & 1 \\ . & . & . \\ X_n^2 & x_n & 1 \end{vmatrix}$$

$$b = \begin{vmatrix} y_0 \\ . \\ y_n \end{vmatrix}$$

$$x = \begin{bmatrix} a \\ b \\ \sigma \end{bmatrix} = (A^T A)^{-1} A^T b$$

$$y_n = a_n x^2 + bx + c$$