$$\boldsymbol{A} = \begin{bmatrix} 1 & x_0 & x_0^2 & \cdots & x_0^n \\ 1 & x_1 & x_1^2 & \cdots & x_1^n \\ 1 & x_2 & x_2^2 & \cdots & x_2^n \\ \vdots & \vdots & \vdots & \ddots & \vdots \\ 1 & x_N & x_N^2 & \cdots & x_N^n \end{bmatrix}$$

$$\boldsymbol{A^T A a} = \boldsymbol{A^T y}$$

$$\boldsymbol{R^T Q^T Q R a} = \boldsymbol{R^T Q^T y}$$

$$\boldsymbol{R a} = \boldsymbol{Q^T y}$$

$$a_{10}x^{10} + a_9x^9 + a_8x^8 + a_7x^7 + a_6x^6 + a_5x^5 + a_4x^4 + a_3x^3 + a_2x^2 + a_1x + a_0$$

$$Prediction\colon x_{n+1}^{p} = x_n + h \cdot \sum_{j=1}^{k} \beta_j \cdot f\left(t_{n-j+1}, x_{n-j+1}\right)$$

$$Correction: x_{n+1} = x_n + h \cdot \sum_{j=0}^{k} \beta_j^* \cdot f\left(t_{n-j+1}, x_{n-j+1}\right) =$$

$$x_{n+1} = x_n + h \cdot \beta_0^* \cdot f\left(t_{n+1}, x_{n+1}^p\right) + h \cdot \sum_{j=1}^{k} \beta_j^* \cdot f\left(t_{n-j+1}, x_{n-j+1}\right)$$