$$\text{minimize} \quad \|\boldsymbol{x} - \boldsymbol{x}_{\text{cor}}\|^2 + \mu \sum_{k=1}^{n-1} (x_{k+1} - x_k)^2 \quad = \|Ax - b\|^2$$

$$\underline{A} = \begin{bmatrix} I_{n\times n} \\ \sqrt{\mu}\, D_{n-1\times n} \end{bmatrix} \qquad \underline{b} = \begin{bmatrix} x_{cor}^{\,n\times 1} \\ 0^{\,n-1\times 1} \end{bmatrix}$$

$$D = \begin{bmatrix} -1 & 1 & & 0 \\ & -1 & 1 & \\ & & \ddots & \ddots \\ 0 & & & -1 & 1 \end{bmatrix} \quad \begin{matrix} \\ \\ \\ \\ \end{matrix} \begin{matrix} \\ \\ \\ \} n-1 \end{matrix}$$

$$\overbrace{\qquad\qquad}^{n}$$