

$$\begin{bmatrix} A_1 \end{bmatrix} \begin{bmatrix} \quad \end{bmatrix} = \begin{bmatrix} \quad \end{bmatrix}$$

Initial given linear system: $A_1 x = b$

$$\begin{bmatrix} A_2 \end{bmatrix} \begin{bmatrix} \quad \end{bmatrix} = \begin{bmatrix} \quad \end{bmatrix}$$

$$\begin{bmatrix} A_3 \end{bmatrix} \begin{bmatrix} \quad \end{bmatrix} = \begin{bmatrix} \quad \end{bmatrix}$$

R_1^2

R_2^3

$$\begin{matrix} \nearrow I_2^1 \\ \nearrow I_3^2 \end{matrix}$$

Multi-level restricting and interpolating operations on given system