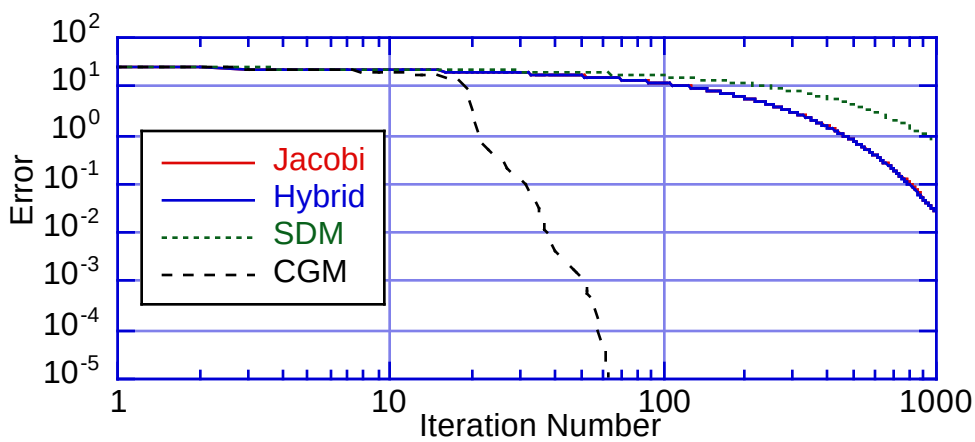
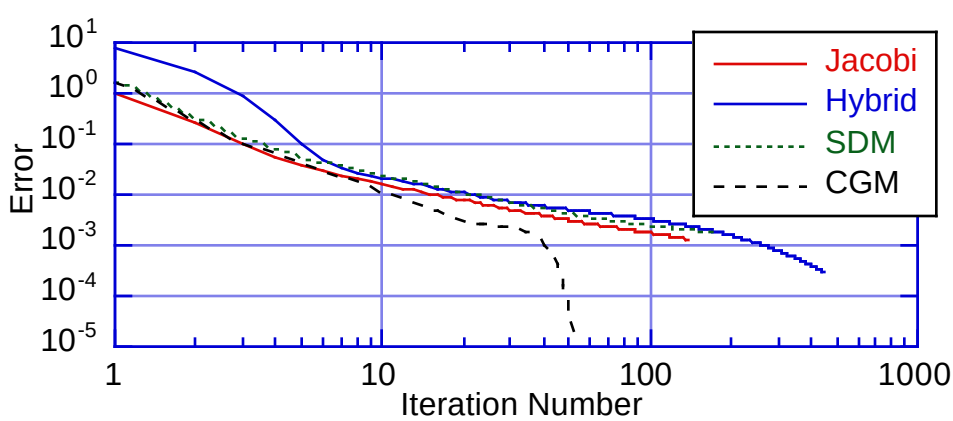
Comparison of Matrix Solvers

The equation is $\mathbf{A}\mathbf{x} = \mathbf{b}$ where $\mathbf{A}$ is the nxn symmetric, positive-definite, matrix

$$\mathbf{A} = \begin{bmatrix} 4 & -1 & & -1 & & & \\ -1 & \cdot & \cdot & & \cdot & & \\ & \cdot & \cdot & \cdot & & \cdot & \\ -1 & & \cdot & \cdot & \cdot & & -1 \\ & \cdot & & \cdot & \cdot & \cdot & \\ & & \cdot & & \cdot & \cdot & -1 \\ & & & -1 & & -1 & 4 \end{bmatrix}$$

Parameter values used in the calculations: $n = 625$, $p = 25$, $\mathbf{x}_0 = \mathbf{0}$

Example 1: $\mathbf{x}_s = (1\ 1\ 1\ \ldots\ 1)^T$



Example 2: $\mathbf{x}_s = (-1\ 1\ -1\ \ldots\ 1)^T$