

Esercitazio. 2/10/14

IMPLEMENTAZIONE di un METODO ITERATIVO

$A^{(0)} = B$ matrice simmetrica invertibile

$$A^{(k)} = \frac{A^{(k-1)} + (A^{(k-1)})^{-1}}{2} \quad k \geq 1$$

CRITERIO di ARRESTO: $\frac{\|A^{(k)} - A^{(k-1)}\|_{\infty}}{\|A^{(k)}\|_{\infty}} < \text{tol.}$

CONVERGENZA: ? $k \geq \text{Max_Iter}$

$$B = Q D Q^T$$

$$A^{(0)} = Q D^{(0)} Q^T$$

$$A^{(k)} = \frac{1}{2} (A^{(k-1)} + A^{(k-1)^{-1}})$$

$$\begin{aligned}
\Rightarrow A^{(k+1)} &= \frac{1}{2} \left(Q D^{(k)} Q^T + Q D^{(k)-1} Q^T \right) \\
&= A^{(k)} = \frac{1}{2} Q \cdot \left(D^{(k)} + D^{(k)-1} \right) Q^T \\
&= Q \cdot \left[\frac{1}{2} \left(D^{(k)} + D^{(k)-1} \right) \right] Q^T
\end{aligned}$$

Metode ~~Relax~~ SANGGEM

$$d_{\sigma}^{(k+1)} = \frac{1}{2} \cdot \left(d_T^{(k)} + \frac{1}{d_T^{(k)}} \right)$$
