Lecture 24

How is CG different from Steepest Descent in terms of Convergence

Steepest Descent

ratio:

$$\left(\frac{\kappa(A)-1}{\kappa(A)+1}\right)^k \to$$

$$\approx \left(1-\frac{1}{\kappa(A)}\right)^k$$

Why CG vs. MINRES?

CG:

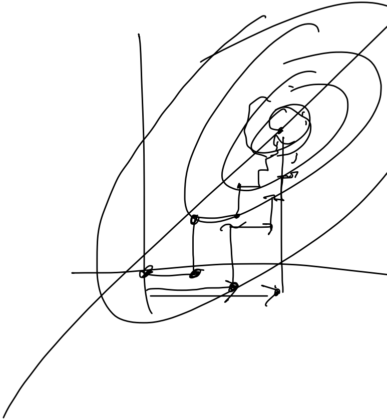
$$\frac{\sqrt{\kappa(A)}-1}{\sqrt{\kappa(A)}+1} \to (1$$

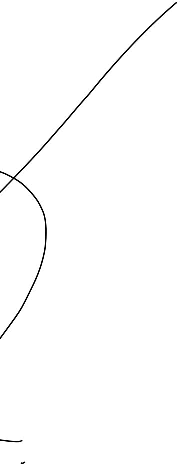
$- \frac{1}{\sqrt{\kappa(A)}} \Big)^{k}$

Why CG vs. MINRES?

- CG is more popular!
- MINRES is harder to implement.
- CG has multiple derivations.

SOR





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