M.Sc. Simulation Sciences, Summer Semester 2020

Fast Iterative Solvers

Suggested Work on Project 1 - Part 3

Conjugate Gradients (CG)

- Implement the CG method *without* preconditioning. Use the algorithm derived in class (Lecture 6).
- For debugging you might want to test your algorithm for a very small matrix (e.g. a 3×3 matrix).
- Note that for a small $n \times n$ matrix the algorithm should give you the exact solution, at least up to machine precision, in n steps!
- On the other hand, you will find that for the large (sparse) matrix used for the assignment, that property is lost, due to round-off errors!