

3. In this experiment we use 4 methods to iteratively solve the system:

1. Method of steepest descent:

This is the most basic method, using 2119 iterations to converge.

2. Then we use Conjugate Gradient Method which uses 74 iterations. This is because it is highly optimized at finding the next direction.

3. ~~the~~ Preconditioned Steepest Descent

This is superfast, requiring only 20 iterations to convergence.

It solves a similar problem with better conditioning. Hence is much faster.

4. Finally, we use Preconditioned Conjugate Gradient Descent, this is the fastest of all, converging in only 9 iterations.

We see that Preconditioned Conjugate Descent is the best method.

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