The next bit of class.

We are going to analyze various algorithms along a number of dimensions.

Work & memory (easy!)

Conditioning (insight 1!)

- How much will answers will change if I change the input a little bit?

Stability (insight 2!)

- Does my algorithm even solve the right problem in floating-point arithmetic?

Conditioning ⇔ property of the fundamental problem

Stability ⇔ property of the algorithm used for the problem

Subsequent sections

Advanced problems

- Sequences of lienar systems
- Generalized eigenvalue problems

Row projection methods (would have liked to cover this sooner!)

Krylov methods for linear systems

- These “iterate” through “direct methods” in an interesting way.
- Conjugate gradient, MINRES, etc.

Eigenvalue algorithms

Special topics!