Lab 11

Stokes equations. deal.II step-22, step-55.

Advanced Topic in Scientific Computing - SISSA, UniTS, 2024-2025

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Assignment

Read the documentation of `step-22` and `step-55`.

1. Solve the Stokes equations with finite element degrees not satisfying the *inf-sup* condition (such as $Q^1 - Q^1$). What do you observe?

2. Starting from `step-22`, follow the instructions in the *Block Schur complement preconditioner* section.

3. Starting from `step-55`, play with the smoothers, smoothing steps, and other properties for the Trilinos AMG to achieve an optimal preconditioner.