

TUTORIAL

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Matt Knepley, Argonne National Laboratory

Andy Ray Terrel, University of Chicago

FEM Concepts

Getting Started

- Quick Introduction to FEniCS
- Quick Introduction to PETSc
- Download & Install

Poisson

- Boundary Conditions
 - System Solution
 - Error Checking
- Higher Order Elements
- Discontinuous Galerkin Methods
 - Coefficient jumps

Stokes

- Mixed Methods
- Iterated Penalty Methods

Mesh Representation

- Rethinking the Mesh
- Mesh Functions

Linear Algebra & Iterative Solvers

- Linear Operators
- Iterative Solvers
- Optimal Solvers

Nonlinearity

Parallelism

- Partitioning
- Distribution