Numerical null controllability of the 2D Stokes equations

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Abstract

The aim of this talk is to present a new strategy to solve numerically the null controllability problem for the 2D Stokes equations. The main idea is to adapt the Fursikov-Imanuvilov’s formulation, see [2]; this strategy has been applied recently to the heat equation by the first two authors. In practice, this needs the solution of a differential problem in the three variables $x_1$, $x_2$ and $t$ that is second order in time and fourth order in space. The approximation is performed with mixed finite Lagrangian $C^0$ elements, see [1]. In this talk we describe the method and we present some numerical experiments.

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Bibliography
