First-order splitting in time schemes for the three-dimensional Navier-Stokes equations: stability and error estimates

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Abstract

In this talk, some splitting in time methods will be presented for the incompressible time-dependent Navier-Stokes equations in three-dimensional domains.

After that, we will focus on a first-order linear fully discrete scheme based on an incremental pressure projection method, which decouples each component of the velocity and the pressure, solving in each time step, a linear convection-diffusion problem for each component of the velocity and a Poisson-Neumann problem for the pressure.

Stability and error estimates will be commented for this scheme.

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