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Numerical reconstruction of the fluid flow from local measurements of the velocity

lundi 19 juin 2023 16:30 (1 heure)

In this talk, we consider different PDE models in fluid mechanics and present a numerical method for the reconstruction of the velocity and the pressure from local measurements of the velocity. To do so, we solve at the discrete level an optimization problem involving regularization terms based on stabilization methods. The analysis of the method for the Stokes equation relies on stability estimates associated to the unique continuation property. The method will be applied to the reconstruction of the blood flow in a vessel from 4D flow MRI data. This talk presents joint works with M. Agbalessi, E. Burman, M. Fernandez, D. Lombardi and M. Nechita.

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