



Contribution ID: 358

Type: **Poster Presentation**

Hydrodynamic instabilities of immiscible fluids in a Hele-Shaw cell

Wednesday, 1 June 2022 14:50 (1h 10m)

Viscous fingering is a topic of interest for long period, it renewable with the beginning of computational fluid dynamics. Here we focus on the classical constellation of non-miscible displacement, as it has been investigated in Hele-Shaw cells. A first fluid front is entering with another second fluid that has different properties. The pure flow is destabilized by the Saffman-Taylor instability. Using COMSOL Multiphysics we investigate the solution of a 2D generic set-up in an Eulerian system. We explore the fingering solutions in terms of various numerical parameters. This led to an extensive comparison of the numerical results, for meshes of various type and refinement. For various solvers we examine the execution time, and the performance of the model.

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Country

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References

Time Block Preference

Time Block B (14:00-17:00 CET)

Participation

Online

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Presenter: GHABI, Chekib

Session Classification: Poster

Track Classification: (MS11) Microfluidics and nanofluidics in porous systems