



Contribution ID: 30

Type: Oral Presentation

The effective boundary condition on a porous wall

Tuesday, 1 June 2021 15:10 (15 minutes)

We derive the new effective boundary condition for the fluid flow in domain with porous boundary. Starting from the Newtonian fluid flow through a domain with an array of small holes on the boundary, using the homogenization and the boundary layers, we find an effective law in the form of generalized Darcy law. If the pores geometry is isotropic, then the condition splits in Beavers-Joseph type condition for the tangential flow and the standard Darcy condition for the normal flow.

The result is rigorously justified by an appropriate error estimate.

Time Block Preference

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

References

Acceptance of Terms and Conditions

[Click here to agree](#)

Newsletter

☐ I do not want to receive the InterPore newsletter

Primary authors: Prof. MARUSIC-PALOKA, Eduard (University of Zagreb); Prof. PAZANIN, Igor (University of Zagreb)

Presenter: Prof. MARUSIC-PALOKA, Eduard (University of Zagreb)

Session Classification: MS24

Track Classification: (MS24 - Invitation Only) Mathematical and computational challenges related to porous media - Special session in memory of Andro Mikelić