



Contribution ID: 13

Type: **Poster Presentation**

Direct numerical simulation of single-phase fluid flow in two-dimensional porous media

The present study investigates the simulation of incompressible fluid flow of water using the OpenFOAM software in a porous medium. The solid phase is imported into the software via an “.stl” file format, and the solid region is extracted from the raw geometry utilizing the snappyHexMesh utility. To analyze the problem in two dimensions, a single cell layer is generated perpendicular to the plane. Subsequently, a mesh study is conducted, and an optimal mesh is selected. The results indicate that a pressure drop of one pascal is established between the inlet and outlet under laminar flow conditions. Furthermore, as the cross-sectional area available for flow decreases, the fluid velocity increases.

Student presentation contest

Opt in

Journal Submission

Consider for Journal Submission

Student Poster Contest

Opt In

Primary author: POURFAROKH, Mohammad Reza (School of Mechanical Engineering, Iran University of Science and Technology, 16846-13114, Tehran, Iran)

Co-author: YOUSEFI, Soroush (School of Mechanical Engineering, Iran University of Science and Technology, 16846-13114, Tehran, Iran)

Presenter: POURFAROKH, Mohammad Reza (School of Mechanical Engineering, Iran University of Science and Technology, 16846-13114, Tehran, Iran)

Track Classification: Geotechnique/Soil Mechanics