Contribution ID: **153** Type: **Oral Presentation**

Modeling of Multicomponent Flow in Porous Media using Higher-Order Methods

Tuesday, 31 May 2022 11:00 (15 minutes)

A numerical scheme of higher-order approximation in both space and time for the single-phase multicomponent flow in porous media is presnted. The mathematical model consists of Darcy velocity, transport equations for components of a mixture, pressure equation and associated relations for physical quantities such as viscosity or density. The discrete problem is obtained using a combination of discontinuous Galerkin method for the discretization of transport equations with and of mixed-hybrid finite element method for the discretization of Darcy and pressure equations both using higher-order approximation. Subsequent nonlinear problem is solved with the fully mass-conservative iterative IMPEC method. Experimental order of convergence analysis (EOC) and some numerical experiments of 2D flow are carried out.

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References

Time Block Preference

Time Block A (09:00-12:00 CET)

Participation

In person

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