Contribution ID: **462**   Type: **Poster (+) Presentation**

Implementation of Higher-Order methods for Modeling of the Single-Phase Multicomponent Flow in Porous Media

Wednesday, 2 June 2021 10:00 (1 hour)

In this work we derive a higher-order numerical scheme for the single-phase multicomponent flow in porous media. The mathematical model consists of Darcy velocity, transport equations for components of a mixture, pressure equation and supplemental constitutive relations. The combination of higher-order discontinuous Galerkin method for the discretization of transport equations and higher-order mixed-hybrid finite element method for the discretization of Darcy velocity and pressure equation is used to obtain the discrete problem. The resulting non-linear system is solved with a new fully mass-conservative iterative IMPEC method. To validate the code and to confirm the expected order of convergence some numerical experiments of 2D flow have been carried out.

Time Block Preference

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

References

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Student Poster Award

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