



Contribution ID: 198

Type: Oral Presentation

## A mixed-dimensional model for thermo-chemical-flows in fractured porous media

*Tuesday, 1 June 2021 15:40 (15 minutes)*

In this presentation we introduce an innovative mathematical model that is able to describe chemical processes that may occur in fractured porous media. A solute is carried by a fluid in the porous medium, that reacting precipitates forming a salt that might alter the physical properties of the system, creating zone of low flow. Conversely, if the salt dissolves it might open up new pathways especially through previously clogged fractures. These chemical reactions depends also on the temperature, which controls their speed. We consider thus a fully-coupled and non-linear system of mixed-dimensional equations that is able to describe such phenomena. Numerical examples show the applicability of the proposed model.

### Time Block Preference

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

### References

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### Student Poster Award

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**Session Classification:** MS3

**Track Classification:** (MS3) Flow, transport and mechanics in fractured porous media