Contribution ID: **145** Type: **Oral Presentation**

Modelling and analysis of multicomponent transport at the interface between free and porous-medium flow influenced by radiation and roughness

Wednesday, 2 June 2021 10:15 (15 minutes)

Evaporation of water from a partly saturated porous medium is an important process. Evaporation fluxes contribute to the water budget and play a role in the energy balance at the soil surface. It is therefore an important component in the hydrological cycle. Moreover, evaporation is also the driving process of soil salinization.
The focus of this presentation will be to analyse multicomponent transport between a porous medium and a free flow. Furthermore, radiation is included in the coupling conditions of the two domains, which makes it possible to evaluate the effect of a diurnal cycle of radiation on evaporation and the transport of other gaseous components. This is highly relevant for predicting greenhouse gas emissions and evaporation rates under natural conditions from soil.

Time Block Preference

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

References

K. Heck, E. Coltman, J. Schneider, and R. Helmig. Influence of radiation on evaporation rates: A numerical analysis.Water Resources Research, 56(10), 2020.

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