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Type: Oral Presentation

Modeling colloid remobilization during temporal variation in ionic strength in porous media

Tuesday, 31 May 2022 14:35 (15 minutes)

Infiltration of surface water into the subsurface through rainfall events and irrigation activities causes temporal variability in the groundwater flow and chemistry. As a result, the colloids that were previously deposited onto the grain surfaces get remobilized thereby causing recontamination of groundwater. Understanding colloid remobilization during perturbations in flow and chemistry is essential to estimate the travel distances of colloidal contaminants and to protect drinking water wells from contamination. In this study, laboratory soil column experiments were performed to understand the effect of temporal variation of ionic strength on colloid release in saturated porous media. The deposited colloids were remobilized through a step-decrease in ionic strength. Colloid release was observed only when the ionic strength became smaller than a critical concentration. Colloid release curves exhibited sharp peaks followed by extended tailing. A one-dimensional mathematical model accounting for ionic strength-dependent release was found to fit the observed breakthrough curves reasonably well.

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India

References

Time Block Preference

Time Block B (14:00-17:00 CET)

Participation

In person

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