



Contribution ID: 483

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.

## Acceptance of the Terms & Conditions

[Click here to agree](#)

## MDPI Energies Student Poster Award

Yes, I would like to submit this presentation into the student poster award.

## Country

India

## References

## Time Block Preference

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

## Participation

In person

**Primary author:** YERRAMILLI, Sai Rama Krishna (Indian Institute of Technology Hyderabad)

**Co-author:** Dr N, Seetha (Indian Institute of Technology Hyderabad)

**Presenter:** YERRAMILLI, Sai Rama Krishna (Indian Institute of Technology Hyderabad)

**Session Classification:** MS02

**Track Classification:** (MS02) Porous Media for a Green World: Water & Agriculture