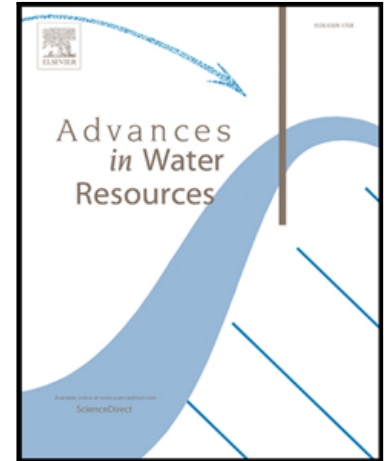


## Accepted Manuscript

Multiphase Smoothed Particle Hydrodynamics approach for modeling  
Soil-Water interactions

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**Highlights**

- A weakly compressible multiphase smoothed particle hydrodynamics model was developed to deal with soil-water interaction problems ;
- A Regularized Bingham Plastic/Mohr–Coulomb (RBPMC-) constitutive law was developed to model Soil, water and both in interaction;
- Development of a new multiphase diffusive term to reduce the pressure oscillations;
- Validations of the proposed SPH model through several benchmarks.

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