Highlights

MPMICE: A hybrid MPM-CFD model for simulating coupled problems in porous media. Application to earthquake-induced submarine landslides

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- MPMICE is introduced for multiphase flow in porous media.
- Material Point method allows to model large deformation of non-isothermal porous media.
- ICE (compressible multi-material CFD formulation) allows to stablize pore water pressure and turbulent flow.
- MPMICE is validated and apply to simulate the earthquake-induced submarine landslide.