

- We present deterministic ground motion simulations that account for cyclic multi-axial response of sediments in the shallow crust.
- Our nonlinear simulations suggest that peak ground accelerations within the sedimentary layers can increase or decrease with respect to linear simulations depending on the frequency content of the excitation.
- Our nonlinear simulations suggest that hybrid 3D-1D site response analyses are inadequate to capture the complexity of fully 3D simulations.