Numerical investigation on gravity affecting wave propagation in low-rigidity medium

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The effect of gravity on wave propagation in low-rigidity medium are discussed. 2D linear finite element method including gravity terms is applied for the simulation of Lamb's problem in half space model and two-layer model. The simulation results are represented by non-dimensional parameters, which gravity terms vary as changing the gravity acceleration. The velocity of the first phase is asymptotic to the travel-time of deep water wave, the amplitude of Rayleigh wave attenuates and the phase excited by the first phase develops as gravity increases. A phase of reflected S waves appears in the two-layer model.