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Author: Keyword:

Search

[ADVANCED](#)
[TOP](#) > [Available Issues](#) > [Table of Contents](#) > [Abstract](#)

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A NUMERICAL METHOD FOR WAVE SCATTERING IN POROELASTIC MEDIA

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Wave scattering in the Biot's poroelastic media is investigated using a numerical method based on the boundary integral formulation. The formulation adopts the fundamental solution derived with a direct manner and traction operators for physically meaningful boundary conditions. Some numerical examples for wave incidence on a spherical scatterer is presented. In the examples, coupling effects of solid and fluid are parameterized with coupling parameters and the boundary conditions. The results show that scattered fields, especially pore pressure, are highly influenced by the coupling effects with the conversion of the fast longitudinal wave to the slow one.

Key Words: poroelasticity, wave scattering, Biot's material, boundary integral equation


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