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Influence of anisotropic properties on vertical vibrations of circular foundation on saturated elastic layer

Suraparb Keawsawasvong , Teerapong Senjuntichai

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Highlights

- The vertical vibrations of a circular foundation on a transversely isotropic poroelastic layer, which have never been reported in the literature, are studied in this paper.
- Axisymmetric Green's functions for a transversely isotropic poroelastic layer are analytically obtained for the first time, which are employed as the required influence functions in the formulation of the interaction problem considered in the paper.
- The accuracy of the proposed solution scheme is verified through comparison with existing solutions.
- Numerical results are presented to demonstrate the influence of anisotropic properties of the layer on vertical compliances of a circular foundation on a saturated elastic layer.

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