## عنوان مقاله:

Dynamic-Stiffness Coefficients of Vertically Loaded Piles Embedded in Non-homogeneous Anisotropic Unbounded Elastic Soils

## محل انتشار:

چهارمین همایش بین المللی مهندسی ژئوتکنیک و مکانیک خاک ایران (سال: 1389)

تعداد صفحات اصل مقاله: 8

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## خلاصه مقاله:

In this paper, time-harmonic response of vertically loaded single piles embedded in nonhomogeneous and anisotropic unbounded elastic soils is addressed. A recently developed numerical scheme for modeling unbounded domains called the scaled boundary finite-element method (SBFEM) is employed. Only the boundary is discretized as in the boundary element method and no fundamental solution is needed as in the finite-element method. Nonhomogeneity models satisfying similarity and anisotropic materials can be modeled without additional efforts. To take into account non-homogeneity and anisotropy of unbounded soils, a power law non-homogeneity model and transversely isotropy is used, respectively. Vertical dynamic-stiffness coefficients of piles are obtained. Numerical examples are addressed to demonstrate simplicity and applicability of the method for dynamic soil-pile interaction analyses. Finite-element .analyses are performed to validate the accuracy of the proposed method

## کلمات کلیدی:

scaled boundary finite-element method, dynamic-stiffness coefficient, pile