

NONLOCAL SHEAR DEFORMATION THEORY FOR THE VIBRATION OF A GRAPHENE SHEET RESTING ON PASTERNAK'S FOUNDATION

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ABSTRACT

This article presents the vibration of a single-layered graphene sheet resting on an elastic foundation by using nonlocal first-order shear deformation theory. Equations of motion for a simply-supported graphene sheet are obtained via a nonlocal shear deformation theory. Effects of nonlocal parameter as well as length of graphene sheet, mode numbers, three-parameter of foundation and thermal parameter are discussed. A comparison example is presented to show the accuracy of the present results.

KEYWORDS: Two-Parameter Elastic Foundation, Nonlocal Elasticity, Vibration, Graphene Sheet