SM2S_12678

XXI International Congress of Theoretical and Applied Mechanics
Warsaw, Poland, August 15–21, 2004

On Optimal Control of a Quasivariational Inequality Arising From a Viscoelastic Contact Problem

O.P. Layeni, A.P. Akinola

Department of Mathematics, Obafemi Awolowo University

We consider the problem of dynamic unilateral contact of a viscoelastic material of the Kelvin-Voigt type with a rigid foundation under the assumption of isotropy and small deformation. The mathematical formulation is a hyperbolic variational inequality which under a transformation yields a quasivariational inequality. We minimize a pertinent cost functional subject to this quasivariational inequality. The case of an elastic composite foundation is also considered using an appropriate energy function under large deformation.

View the extended summary