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SERIES: MECHANICAL ENGINEERING

METHOD OF DIMENSIONALITY REDUCTION IN CONTACT MEC
FRICTION: A USERS HANDBOOK. I. AXIALLY-SYMMETRIC CONTA

Valentin L. Popov, Markus Hess

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Abstract

The Method of Dimensionality Reduction (MDR) is a method of calculation and simulation of contacts of elastic and viscoel
essentially of two simple steps: (a) substitution of the three-dimensional continuum by a uniquely defined one-dimension
foundation (Winkler foundation) and (b) transformation of the three-dimensional profile of the contacting bodies by mean
As soon as these two steps are completed, the contact problem can be considered to be solved. For axial symmetric contacts
hand is required which does not exceed elementary calculus and will not be a barrier for any practically-oriented engineer.
implemented numerically, which is almost trivial due to the independence of the foundation elements. In spite of their sim
The present paper is a short practical guide to the MDR.

Full Text:

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