

عنوان مقاله:

Finite Element Formulation for Viscoelastic Contact Problems with Friction based on the Generalized Maxwell Model

محل انتشار:

شانزدهمین کنفرانس سالانه بین المللی مهندسی مکانیک (سال: 1387)

تعداد صفحات اصل مقاله: 10

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خلاصه مقاله:

Generally, contact of deformable bodies is a nonlinear problem. Viscoelastic materials have a time-dependent response, since both viscous and elastic characteristics depend on time. When at least one of the contacting bodies is made of a viscoelastic material, the contact problems become more difficult, and a nonlinear time-dependent contact problem is obtained. Objective of this paper is to develop a general finite element formulation associated with an incremental relaxation procedure is established for analysis of frictional contact problems in viscoelastic solids. A generalized Maxwell model is used to model the viscoelastic constitutive equations of which the relaxation function is represented by sum of a series of decaying exponential functions of time. The contact behaviors are accurately performed through an augmented Lagrangian method.

کلمات کلیدی:

"frictional contact problems", "generalized Maxwell model", "viscoelastic behavior"

لینک ثابت مقاله در پایگاه سیویلیکا:

<https://civilica.com/doc/41372>

