

عنوان مقاله:

Boundary Element Formulation for General Viscoelastic Solids

محل انتشار:

هفتمین همایش انجمن هوافضای ایران (سال: 1386)

تعداد صفحات اصل مقاله: 10

نویسندگان:

H. Ashrafi - *Department of Mechanical Engineering of Agricultural Machines, Shiraz University, Shiraz, M.Sc. Student*
(of Shiraz University (corresponding author

M Farid - *Department of Mechanical Engineering, Shiraz University, Shiraz, Assistant Professor of Shiraz University*

M. Kasraei - *Department of Mechanical Engineering of Agricultural Machines, Shiraz University, Shiraz, Assistant Professor of Shiraz University*

خلاصه مقاله:

From basic assumptions of viscoelastic constitutive relations and weight residual techniques, a simple but effective Boundary Element formulation is implemented for the Kelvin viscoelastic solid model. This approach avoids the use of relaxation functions and makes easier changes in natural or essential boundary conditions along the time. Imposing spatial approximations and adopting convenient kinematical relations for strain velocities, a system of time differential equations is derived. The aim of this paper is to implement viscoelastic behavior in a time domain approach as well. Another important feature of the derived formulation is the absence of domain discretizations, which simplify the treatment of problems involving infinite domains (the half-space problems). At the end of this paper, a numerical example is provided to validate the formulation which compared to analytical solutions.

کلمات کلیدی:

"Viscoelastic Solids", "Boundary Element Method", "Kelvin Model"

لینک ثابت مقاله در پایگاه سیویلیکا:

<https://civilica.com/doc/55515>

