

## عنوان مقاله:

Quasi-Static analysis of time-dependent linear viscoelastic materials using an improved incremental meshless RPIM method

## محل انتشار:

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## خلاصه مقاله:

In this paper, a meshless radial point interpolation method (RPIM) applied to solve two-dimensional quasistatic problems in linear viscoelastic media and formulated in the time domain. Formulation is derived from the integral approach based on a discrete spectrum representation. The analysis is performed using the correspondence principle and incremental technique. Finite difference integration is used to discretize the integral operators. Meshfree methods based on the radial basis point interpolation can satisfy the essential boundary conditions exactly since its approximation function passes through each node in an influence domain and thus its shape functions possess the properties of the delta function. In the present method, nodal points are spread on the analyzed domain and each node is surrounded by a radial sub-domain. The domain integrals, are computed by the background decomposition method (BDM), which is a truly meshfree integration technique and no background mesh is required. Some numerical examples are given at the end to demonstrate the availability and accuracy of the present method. The accuracy of the method is demonstrated by presenting several numerical examples. The results are compared with available numerical solutions and very good agreement is observed in all cases.

## کلمات کلیدی:

.Meshless RPIM Method, Linear viscoelastic behavior, BDM domain integral method, incremental constitutive law

## لینک ثابت مقاله در پایگاه سیویلیکا:

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