عنوان مقاله:

Application of higher-order elements in scaled boundary finite element method (SBFEM) to improve its accuracy and efficiency

محل انتشار:

پنجمین کنگره ملی مهندسی عمران (سال: 1389)

تعداد صفحات اصل مقاله: 8

نویسندگان:

M.I Khodakarami - *Ph.D. Student, Department of Civil Engineering, Tarbiat Modares University, Tehran, Iran*

N Khaji - *Assistant Professor, Department of Civil Engineering, Tarbiat Modares University, Tehran, Iran*

خلاصه مقاله:

The SBFEM is a semi-analytical fundamental-solution-less boundary-element method based only on finite elements, which combines advantages of the finite element and boundary element methods. This method has numerical solution on the boundary and analytical solution on the domain of the problem. In this paper, the Chebyshev shape functions with Clenshaw-Curtis quadrature are applied to the elements on boundary, which leads to lumped-form and blocky-lumped-form of coefficient matrices and higherorder elements. A set of wave propagation problems, subjected to various load forms are modeled using the SBFEM with very small number of degrees of freedom. The numerical results agree very well with the analytical solutions as well the results from other numerical methods.

کلمات کلیدی:

elastodynamics, scaled boundary finite element method, higher order element, Clenshaw-Curtis quadrature, chebyshev shape function.

لینک ثابت مقاله در پایگاه سیویلیکا:

https://civilica.com/doc/80416