عنوان مقاله:

Free vibration of thick plates with cutouts by meshless method based on higher order shear deformation theory

نویسندگان:

Seyed Amin Vakili - *Ph.D. Student, Department of Civil Engineering, Faculty of Engineering, Ferdowsi University ofMashhad, Mashhad, Iran*

Farzad Shahabian - *Professor, Department of Civil Engineering, Faculty of Engineering, Ferdowsi University ofMashhad, Mashhad, Iran*

Mohammad Hossein Ghadiri Rad - *Assistant Professor, Department of Civil Engineering, Quchan University of Technology, Quchan,Iran;*

خلاصه مقاله:

In this paper, free vibration of thick plate with cutout is carried out using Element Free Galerkin (EFG) method based on the third order shear deformation theory. It should be mentioned that the EFG method does not need any mesh generation in problem domain and its boundaries. The Radial Point Interpolation method (RPIM) is used to discrete the problem domain. Since the produced functions using RPIM has the Kronecker delta function property, the essential boundary conditions can be enforced in a simple way. To examine the validity of the EFG method in the application of eigenvalue problems for the shear deformable plates, natural frequencies of the square thick plates with different hard-type boundary conditions are calculated. The obtained results are compared with other methods, Numerical implementations show that the presented method has high efficiency, good accuracy.

کلمات کلیدی:

EFG method; Thick plate; Cutout; free vibration; Higher order shear deformation theory.

لینک ثابت مقاله در پایگاه سیویلیکا:

https://civilica.com/doc/1853092