

عنوان مقاله:

Mesh-less post-buckling analysis of imperfect composite plates under end-shortening strain

محل انتشار:

شانزدهمین کنفرانس بین المللی انجمن هوافضای ایران (سال: 1395)

تعداد صفحات اصل مقاله: 5

نویسندگان:

S. A. M. Ghannadpour - *New Technologies and Engineering Department, Shahid Beheshti University, G.C, Tehran, Iran*

Payam Kiani - *MSc Student New Technologies and Engineering Department, Shahid Beheshti University, G.C, Tehran, Iran*

خلاصه مقاله:

In this article, post-buckling analysis of square imperfect composite plates with simply supported edges to uniform end-shortening in their planes is investigated by mesh-less method. The mesh-less method means that do not require the generation of meshes as in the finite element method, but only requires a scattered set of nodes to discretize the domain of interest. Due to sharp fluctuations in the boundary conditions and the occurrence of Runge's phenomenon in the case of the uniform points, in the present study the plate is discretized with Legendre-gauss-lobatto nodes. First order shear deformation theory is used for developing equilibrium equations that it produces acceptable results for moderately thick plates. Equations system is obtained by discretizing von-Karman's compatibility equations and boundary conditions with finite Legendre basis functions that are substituted into displacement fields. The nonlinear system of equations is solved by using Newton-Raphson procedure. Some results are computed and compared with those available in the literature, wherever possible.

کلمات کلیدی:

Mesh-less; Post-buckling; Legendre basis- functions; FSDT; Imperfection

لینک ثابت مقاله در پایگاه سیویلیکا:

<https://civilica.com/doc/636716>

