BEST: International Journal of Management, Information Technology and Engineering (BEST: IJMITE)
ISSN 2348-0513
Vol. 2, Issue 2, Feb 2014, 5-14

RBF-BASED MESH-LESS METHOD FOR LARGE DEFLECTION OF THIN PLATES

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ABSTRACT

A simple, yet accurate, mesh-less method for the solution of thin plates undergoing large deflections is presented. The method is based on collocation with 5^{th} order polynomial radial basis function. In order to address the in-plane edge conditions, two formulations, namely *w-F* and *u-v-w* are considered for the movable and immovable edge conditions, respectively. The resulted coupled nonlinear equations for the two cases are solved using an incremental-iterative procedure. The accuracy and efficiency of the method is verified through several numerical examples.

KEYWORDS: RBF, Mesh-Less, Plate, Movable, Immovable Edge