

MINIMIZING ARTIFICIAL STIFFNESS IN LINEAR TETRAHEDRAL ELEMENT USING VIRTUAL MESH REFINEMENT

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Abstract	This work presents a new method to minimize artificial stiffness in linear tetrahedral element using virtual mesh refinement (VRM) method. The basic idea behind this work is to give additional degree of freedom by using internal mesh over the linear tetrahedral element. This local internal mesh and its corresponding equilibrium condition under particular boundary condition are invisible to users or virtual. Using specialized displacement test vectors, strain energy is obtained and used to calculate reduction factor for artificial stiffness. Numerical experiments are performed at the end to briefly qualitatively show performance of our proposed method.
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