ACOUSTIC DISPLACEMENT TRIANGLE BASED ON THE INDIVIDUAL ELEMENT TEST

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Abstract

A three node, displacement based, acoustic element is developed. In order to avoid spurious rotational modes, a higher order stiffness is introduced. The higher order stiffness is developed from an incompatible strain field which computes element volume changes under nodal rotational displacements fields. The higher order strain satisfies the IET requirements, non-affecting convergence. The higher order stiffness is modulated, element by element, with a factor. Thus, the displacement based formulation is capable of placing the spurious rotational modes over the range of physical compressional modes that can be accurately captured by the mesh.

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