

An Implicit MRCT Element

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The multiresolution continuum theory (MRCT) is a higher order continuum theory where additional kinematic variables account for microstructural inhomogeneities at several distinct length scales. This can be particularly important for localization problems. One strength of the theory is that it can account for details in the microstructure of a material without using an extremely fine mesh. It is a quite general theory that includes several other higher order continuum theories as subcases. The implicit 3D MRCT element is implemented in the general purpose finite element program FEAP. The mesh independency associated with length scale parameter and the convergence rate of the element are illustrated by means of test cases.

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