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Two-Scale FEM Approach in the Dynamic Response of a Heterogeneous Material AXINTE IONITA, ERIC MAS, BRAD CLEMENTS, Los Alamos National Laboratory — It is common in the numerical simulation of the dynamic response of a heterogeneous material to use the average material properties, which usually are obtained through a homogenization technique. This approach would lead to an average response of the composite. However, if one interested in the local response of the material then a localization technique needs to be used. This paper addresses the localization problem in the dynamic response of such material, using a two-scale FEM approach. The basic equations for coupling between first (or coarse) scale to the second (or fine scale) are presented together with two strategies for solving the local fields. Numerical examples are included.

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