Domain decomposition Voxel Finite Element Method for 3-D elastodynamic analysis

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We developed a code using the domain decomposition Voxel finite element method for 3-D elastodynamic analysis. To check numerical accuracy of the method, we compared the results from the FEM with the analytical solution for a double couple point source in a full-space, a half-space, and a layered-space. We also compared the computation time and memory requirements of the domain decomposition Voxel FEM with that of the FDM. According to the numerical experiments, although the memory requirement of the FEM is comparable with the FDM, the computation time is more than ten times longer that of the FEM.