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Research Area:
Computational Mathematics

This work will develop a parallel implementation of a three-dimensional Symmetric-Galerkin boundary integral method. The techniques developed should apply to any boundary integral formulation, and thus the Laplace equation will be examined first. Both direct and iterative solvers for the linear system will be considered. Two potentially significant applications of this work are (a) the modeling of electrodeposition processes of interest to Y-12; and (b) the modeling of the electrospray process, of interest to the Analytical Chemistry Division at ORNL.

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