Mesh Tools for Automatic Generation of Finite-Element Code in Two Dimensions[*]

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Abstract

This report describes a set of tools for creating, refining, searching, and visualizing unstructured finite-element meshes for general regions in two dimensions. These were developed in support of a project concerned with using symbolic and numeric techniques to automatically generate code for the finite-element analysis of problems in liquid crystal physics and other areas of applied computational science. Included are descriptions of the tools and data structures, C and Fortran source listings, and examples.

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