

The Mesquite Toolkit

Poor mesh quality is known to adversely affect both solution efficiency and accuracy. There has been considerable research on a wide variety of mesh improvement algorithms. The impact of these algorithms has been somewhat limited because they are often embedded in particular meshing or application software packages. A stand-alone, freely available software package would make the most effective algorithms available to many more applications.

To this end, we are developing the MESQUITE software toolkit for mesh quality improvement. The toolkit will also serve as a platform for further research into mesh quality improvement methods. We describe the motivation, goals, and design of MESQUITE as well as give some computational results using the underlying algorithms that show the benefit of the package.

Patrick M. Knupp
pknupp@sandia.gov
<http://endo.sandia.gov/~pknupp/>