Parallelizing Geometric Mesh Partitioning

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Abstract

In "Geometric Mesh Partitioning: Implementation and Experiments", Gilbert, Miller and Teng investigated a method of dividing an irregular mesh into equal–sized pieces with few interconnecting edges. They provided an implementation of the code in Matlab. We propose to parallelize this code within the framework of Matlab*p. The method first projects stereographically points from d dimensions to a sphere in $d + 1$ dimensions. Then a central point is approximately calculated using radon points, and then stereographically projecting the points back to d dimension. First, we propose to simply parallelize the existing code to work in Matlab*p. We then hope to investigate if the central point might be approximated in a better way.