

GENERATING QUALITY STRUCTURED CONVEX GRIDS ON IRREGULAR REGIONS*

P. BARRERA-SÁNCHEZ ^{†§}, F. J. DOMÍNGUEZ-MOTA ^{‡¶},
G. GONZÁLEZ-FLORES ^{†§}, AND J. G. TINOCO-RUIZ [‡]

Dedicated to Víctor Pereyra on the occasion of his 70th birthday

Abstract. In this paper, we address the problem of generating good quality grids on very irregular regions, and propose a measure for both the quality of the generated grids and the difficulty of the problem, as well as an efficient algorithm based on the minimization of area functionals to solve it. Using the proposed measure, a preliminary classification of some standard test regions is presented.

Key words. Numerical grid generation, variational grid generation, area functionals, direct optimization method

AMS subject classifications. 65L50, 65M50, 65N50, 78M50, 80M30

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[†]Facultad de Ciencias, U.N.A.M., México ([pbs, gfgf}@hp.fciencias.unam.mx](mailto:{pbs, gfgf}@hp.fciencias.unam.mx)).

[‡]Facultad de Ciencias Físico Matemáticas, U.M.S.N.H., México ([dmota, jtinoco}@umich.mx](mailto:{dmota, jtinoco}@umich.mx)).

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