Vladimir A. Garanzha, Lennard Kamenski, Hang Si (Eds.)

Numerical Geometry, Grid Generation and Scientific Computing

Proceedings of the 9th International Conference, NUMGRID 2018 / Voronoi 150, Celebrating the 150th Anniversary of G.F. Voronoi, Moscow, Russia, December 2018

Series: Lecture Notes in Computational Science and Engineering

The focus of these conference proceedings is on research, development, and applications in the fields of numerical geometry, scientific computing and numerical simulation, particularly in mesh generation and related problems. In addition, this year's special focus is on Voronoi diagrams and their applications, celebrating the 150th birthday of G.F. Voronoi. In terms of content, the book strikes a balance between engineering algorithms and mathematical foundations.It presents an overview of recent advances in numerical geometry, grid generation and adaptation in terms of mathematical foundations, algorithm and software development and applications. The specific topics covered include: quasi-conformal and quasi-isometric mappings, hyperelastic deformations, multidimensional generalisations of the equidistribution principle, discrete differential geometry, spatial and metric encodings, Voronoi-Delaunay theory for tilings and partitions, duality in mathematical programming and numerical geometry, mesh-based optimisation and optimal control methods. Further aspects examined include iterative solvers for variational problems and algorithm and software development. The applications of the methods discussed are multidisciplinary and include problems from mathematics, physics, biology, chemistry, material science, and engineering.

1st ed. 2019, XXI, 320 p. 160 illus., 107 illus. in color.

Printed book

Hardcover

169,99 € | £149.99 | $219.99
[1]181,89 € (D) | 186,99 € (A) | CHF 200,50

eBook

142,79 € | £119.50 | $169.00
[2]142,79 € (D) | 142,79 € (A) | CHF 160,00

Available from your library or springer.com/shop

MyCopy [3]

Printed eBook for just
€ | $ 24.99
springer.com/mycopy

Part of **SPRINGER NATURE**