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Numerical mathematics for graphics. (Matematica numerica per la grafica.) (Italian)

Zbl 1344.68003

Mathematical and Computational Biology and Numerical Analysis 1. Rome: Aracne Editrice (ISBN 978-88-548-8703-9). xiii, 223 p. (2015).

Publisher's description (translated): Graphics is a field of computer science, which constantly grows and with vast applications in several sectors as engineering, natural sciences, medicine, industry, teaching, art, and amusement. Representation of objects considering its special characteristics is used to generate realistic models of these objects. Using these representations, methods allowing the description of an object by curves and surfaces can be found.

In this volume, numerical methods for the construction of curves, polynomial surfaces and splines in parametric form are presented. The theoretical part of this book is completed with the use of Matlab implementing the corresponding algorithms. Change of position, orientation and dimension of the represented objects is also studied.

MSC:

- 68-02 Research exposition (monographs, survey articles) pertaining to computer science
- 65-02 Research exposition (monographs, survey articles) pertaining to numerical analysis
- 65D07 Numerical computation using splines
- 65D17 Computer-aided design (modeling of curves and surfaces)
- 65D18 Numerical aspects of computer graphics, image analysis, and computational geometry
- 65Y15 Packaged methods for numerical algorithms
- 68U05 Computer graphics; computational geometry (digital and algorithmic aspects)

Software:

Matlab