1. Record Nr. UNINA9910863176503321

Autore	Brandts Jan
Titolo	Simplicial Partitions with Applications to the Finite Element Method / / by Jan Brandts, Sergey Korotov, Michal Kížek
Pubbl/distr/stampa	Cham : , : Springer International Publishing : , : Imprint : Springer, , 2020
ISBN	3-030-55677-8
Edizione	[1st ed. 2020.]
Descrizione fisica	1 online resource (XV, 188 p. 102 illus., 10 illus. in color.)
Collana	Springer Monographs in Mathematics, , 2196-9922
Disciplina	512.73
Soggetti	Numerical analysis Mathematics Mathematical analysis Chemometrics Numerical Analysis Applications of Mathematics Analysis Mathematical Applications in Chemistry
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Sommario/riassunto	This monograph focuses on the mathematical and numerical analysis of simplicial partitions and the finite element method. This active area of research has become an essential part of physics and engineering, for example in the study of problems involving heat conduction, linear elasticity, semiconductors, Maxwell's equations, Einstein's equations and magnetic and gravitational fields. These problems require the simulation of various phenomena and physical fields over complicated structures in three (and higher) dimensions. Since not all structures can be decomposed into simpler objects like d-dimensional rectangular blocks, simplicial partitions are important. In this book an emphasis is placed on angle conditions guaranteeing the convergence of the finite element method for elliptic PDEs with given boundary conditions. It is aimed at a general mathematical audience who is assumed to be familiar with only a few basic resultsfrom linear algebra, geometry, and

mathematical and numerical analysis. .