1. Record Nr.   UNISA990002040640203316

Titolo	The world of learning : 1969-1970
Pubbl/distr/stampa	London : Europa publications limited, 1970
Descrizione fisica	XIV, 1843 p. ; 24 cm
Collocazione	III.1. 1733 (I I 155)
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia

2. Record Nr.   UNINA9910574858103321

Autore	Dolejsi Vit
Titolo	Anisotropic hp-Mesh Adaptation Methods : Theory, implementation and applications / / by Vít Dolejší, Georg May
Pubbl/distr/stampa	Cham : , : Springer International Publishing : , : Imprint : Birkhäuser, , 2022
ISBN	3-031-04279-4
Edizione	[1st ed. 2022.]
Descrizione fisica	1 online resource (258 pages)
Collana	Neas Center Series, , 2523-3351
Disciplina	515.353 518
Soggetti	Numerical analysis Mathematics - Data processing Numerical Analysis Computational Science and Engineering
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Description based upon print version of record.
Nota di contenuto	Introduction -- Metric Based Mesh Representation -- Interpolation Error Estimates for Two Dimensions -- Interpolation Error Estimates for Three Dimensions -- Anisotropic Mesh Adaptation, h-Variant -- Anisotropic Mesh Adaptation Method, hp-Variant -- Framework of the

Goal-Oriented Error Estimates -- Goal-Oriented Anisotropic Mesh Adaptation -- Implementation Aspects -- Applications.

Sommario/riassunto	Mesh adaptation methods can have a profound impact on the numerical solution of partial differential equations. If devised and implemented properly, adaptation significantly reduces the size of the algebraic systems resulting from the discretization, while ensuring that applicable error tolerances are met. In this monograph, drawing from many years of experience, the authors give a comprehensive presentation of metric-based anisotropic hp-mesh adaptation methods. A large part of this monograph is devoted to the derivation of computable interpolation error estimates on simplicial meshes, which take into account the geometry of mesh elements as well as the anisotropic features of the interpolated function. These estimates are then used for the optimization of corresponding finite element spaces in a variety of settings. Both steady and time dependent problems are treated, as well as goal-oriented adaptation. Practical aspects of implementation are also explored, including several algorithms. Many numerical experiments using the discontinuous Galerkin method are presented to illustrate the performance of the adaptive techniques. This monograph is intended for scientists and researchers, including doctoral and master-level students. Portions of the text can also be used as study material for advanced university lectures concerning a posteriori error analysis and mesh adaptation.