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Sommario/riassunto

This book collects selected contributions presented at the INdAM Workshop "Geometric Challenges in Isogeometric Analysis", held in Rome, Italy on January 27-31, 2020. It gives an overview of the forefront research on splines and their efficient use in isogeometric methods for the discretization of differential problems over complex and trimmed geometries. A variety of research topics in this context are covered, including (i) high-quality spline surfaces on complex and trimmed geometries, (ii) construction and analysis of smooth spline spaces on unstructured meshes, (iii) numerical aspects and benchmarking of isogeometric discretizations on unstructured meshes, meshing strategies and software. Given its scope, the book will be of interest to both researchers and graduate students working in the areas of approximation theory, geometric design and numerical simulation. Chapter 10 is available open access under a Creative Commons Attribution 4.0 International License via link.springer.com.