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Titolo	Euclidean Design Theory // by Masanori Sawa, Masatake Hirao, Sanpei Kageyama
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Descrizione fisica	1 online resource (139 pages)
Collana	JSS Research Series in Statistics, , 2364-0065
Disciplina	519.5
Soggetti	Statistics Mathematical statistics - Data processing Statistical Theory and Methods Statistics and Computing Statistics in Engineering, Physics, Computer Science, Chemistry and Earth Sciences Statistics in Business, Management, Economics, Finance, Insurance
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
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Nota di contenuto	Chapter I: Reproducing Kernel Hilbert Space -- Chapter II: Cubature Formula -- Chapter III: Optimal Euclidean Design -- Chapter IV: Constructions of Optimal Euclidean Design -- Chapter V: Euclidean Design Theory.
Sommario/riassunto	This book is the modern first treatment of experimental designs, providing a comprehensive introduction to the interrelationship between the theory of optimal designs and the theory of cubature formulas in numerical analysis. It also offers original new ideas for constructing optimal designs. The book opens with some basics on reproducing kernels, and builds up to more advanced topics, including bounds for the number of cubature formula points, equivalence theorems for statistical optimalities, and the Sobolev Theorem for the cubature formula. It concludes with a functional analytic generalization of the above classical results. Although it is intended for readers who are interested in recent advances in the construction theory of optimal experimental designs, the book is also useful for researchers seeking rich interactions between optimal experimental designs and various

mathematical subjects such as spherical designs in combinatorics and cubature formulas in numerical analysis, both closely related to embeddings of classical finite-dimensional Banach spaces in functional analysis and Hilbert identities in elementary number theory. Moreover, it provides a novel communication platform for “design theorists” in a wide variety of research fields.
