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Disciplina	512.9434
Soggetti	Functional analysis Probabilities Mathematical physics Mathematical optimization Functional Analysis Probability Theory Mathematical Physics Optimization Anàlisi funcional Constants matemàtiques Desigualtats (Matemàtica) Probabilitats Llibres electrònics
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Livello bibliografico	Monografia
Nota di contenuto	- Introduction and motivation -- Complex Gaussian random vectors and their probability law -- A quantum correlation matrix version of the Grothendieck inequality -- Powers of inner products of random vectors, uniformly distributed on the sphere -- Completely correlation preserving functions -- The real case: towards extending Krivine's approach -- The complex case: towards extending Haagerup's approach -- A summary scheme of the main result -- Concluding remarks and open problems -- References -- Index.
Sommario/riassunto	This book concentrates on the famous Grothendieck inequality and the continued search for the still unknown best possible value of the real

and complex Grothendieck constant (an open problem since 1953). It describes in detail the state of the art in research on this fundamental inequality, including Krivine's recent contributions, and sheds light on related questions in mathematics, physics and computer science, particularly with respect to the foundations of quantum theory and quantum information theory. Unifying the real and complex cases as much as possible, the monograph introduces the reader to a rich collection of results in functional analysis and probability. In particular, it includes a detailed, self-contained analysis of the multivariate distribution of complex Gaussian random vectors. The notion of Completely Correlation Preserving (CCP) functions plays a particularly important role in the exposition. The prerequisites are a basic knowledge of standard functional analysis, complex analysis, probability, optimisation and some number theory and combinatorics. However, readers missing some background will be able to consult the generous bibliography, which contains numerous references to useful textbooks. The book will be of interest to PhD students and researchers in functional analysis, complex analysis, probability, optimisation, number theory and combinatorics, in physics (particularly in relation to the foundations of quantum mechanics) and in computer science (quantum information and complexity theory).