1. Record Nr. UNINA9910300556503321

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Titolo	Introduction to Random Matrices : Theory and Practice / / by Giacomo Livan, Marcel Novaes, Pierpaolo Vivo
Pubbl/distr/stampa	Cham : , : Springer International Publishing : , : Imprint : Springer, , 2018
ISBN	3-319-70885-6
Edizione	[1st ed. 2018.]
Descrizione fisica	1 online resource (IX, 124 p. 10 illus. in color.)
Collana	SpringerBriefs in Mathematical Physics, , 2197-1757 ; ; 26
Disciplina	512.9434
Soggetti	Physics Probabilities Mathematical physics Statistical physics Dynamics Mathematical Methods in Physics Probability Theory and Stochastic Processes Mathematical Physics Statistical Physics and Dynamical Systems Complex Systems
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di bibliografia	Includes bibliographical references at the end of each chapters.
Nota di contenuto	Preface -- Getting Started -- Value the eigenvalue -- Classified Material -- The fluid semicircle -- Saddle-point-of-view -- Time for a change -- Meet Vandermonde -- Resolve(nt) the semicircle -- One pager on eigenvectors -- Finite N -- Meet Andréief -- Finite N is not finished -- Classical Ensembles:Wishart-Laguerre -- Meet Marenko and Pastur -- Replicas -- Replicas for GOE -- Born to be free.
Sommario/riassunto	Modern developments of Random Matrix Theory as well as pedagogical approaches to the standard core of the discipline are surprisingly hard to find in a well-organized, readable and user-friendly fashion. This slim and agile book, written in a pedagogical and hands-on style, without sacrificing formal rigor fills this gap. It brings Ph.D. students in Physics, as well as more senior practitioners, through the standard tools and results on random matrices, with an eye on most recent

developments that are not usually covered in introductory texts. The focus is mainly on random matrices with real spectrum. The main guiding threads throughout the book are the Gaussian Ensembles. In particular, Wigner's semicircle law is derived multiple times to illustrate several techniques (e.g., Coulomb gas approach, replica theory). Most chapters are accompanied by Matlab codes (stored in an online repository) to guide readers through the numerical check of most analytical results.