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Titolo	Average-Case Analysis of Numerical Problems [[electronic resource] /] / by Klaus Ritter
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Descrizione fisica	1 online resource (XI, 252 p.)
Collana	Lecture Notes in Mathematics, , 0075-8434 ; ; 1733
Disciplina	519.4
Soggetti	Numerical analysis Statistics Numerical Analysis Statistics, general
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Note generali	Bibliographic Level Mode of Issuance: Monograph
Nota di contenuto	Linear problems: Definitions and a classical example -- Second-order results for linear problems -- Integration and approximation of univariate functions -- Linear problems for univariate functions with noisy data -- Integration and approximation of multivariate functions -- Nonlinear methods for linear problems -- Nonlinear problems.
Sommario/riassunto	The average-case analysis of numerical problems is the counterpart of the more traditional worst-case approach. The analysis of average error and cost leads to new insight on numerical problems as well as to new algorithms. The book provides a survey of results that were mainly obtained during the last 10 years and also contains new results. The problems under consideration include approximation/optimal recovery and numerical integration of univariate and multivariate functions as well as zero-finding and global optimization. Background material, e.g. on reproducing kernel Hilbert spaces and random fields, is provided.