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Nota di contenuto	Mathematical preliminaries -- Asymptotic analysis -- Univariate integrals -- Multivariate laplace type integrals -- Approximations for normal integrals -- Arbitrary probability integrals -- Crossing rates of stochastic processes.
Sommario/riassunto	This book gives a self-contained introduction to the subject of asymptotic approximation for multivariate integrals for both mathematicians and applied scientists. A collection of results of the Laplace methods is given. Such methods are useful for example in reliability, statistics, theoretical physics and information theory. An important special case is the approximation of multidimensional normal integrals. Here the relation between the differential geometry of the boundary of the integration domain and the asymptotic probability content is derived. One of the most important applications of these methods is in structural reliability. Engineers working in this field will find here a complete outline of asymptotic approximation methods for failure probability integrals.