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Nota di contenuto	Introduction -- Densities in Hermitian Matrix Models -- Bifurcation Transitions and Expansions -- Large-N Transitions and Critical Phenomena -- Densities in Unitary Matrix Models -- Transitions in the Unitary Matrix Models -- Marcenko-Pastur Distribution and McKay's Law.
Sommario/riassunto	The eigenvalue densities in various matrix models in quantum chromodynamics (QCD) are ultimately unified in this book by a unified model derived from the integrable systems. Many new density models and free energy functions are consequently solved and presented. The phase transition models including critical phenomena with fractional power-law for the discontinuities of the free energies in the matrix models are systematically classified by means of a clear and rigorous mathematical demonstration. The methods here will stimulate new research directions such as the important Seiberg-Witten differential in Seiberg-Witten theory for solving the mass gap problem in quantum Yang-Mills theory. The formulations and results will benefit researchers and students in the fields of phase transitions, integrable systems, matrix models and Seiberg-Witten theory.