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Nota di contenuto	Frontmatter -- Contents -- Preface -- Chapter One. Gems of Spectral Theory -- Chapter Two. Szeg's Theorem -- Chapter Three The Killip-Simon Theorem: Szeg for OPRL -- Chapter Four. Sum Rules and Consequences for Matrix Orthogonal Polynomials -- Chapter Five. Periodic OPRL -- Chapter Six. Toda Flows and Symplectic Structures -- Chapter Seven. Right Limits -- Chapter Eight. Szeg and Killip-Simon Theorems for Periodic OPRL -- Chapter Nine. Szeg's Theorem for Finite Gap OPRL -- Chapter Ten. A.C. Spectrum for Bethe-Cayley Trees -- Bibliography -- Author Index -- Subject Index
Sommario/riassunto	This book presents a comprehensive overview of the sum rule approach to spectral analysis of orthogonal polynomials, which derives from Gábor Szego's classic 1915 theorem and its 1920 extension. Barry Simon emphasizes necessary and sufficient conditions, and provides mathematical background that until now has been available only in journals. Topics include background from the theory of meromorphic functions on hyperelliptic surfaces and the study of covering maps of the Riemann sphere with a finite number of slits removed. This allows for the first book-length treatment of orthogonal polynomials for measures supported on a finite number of intervals on the real line. In addition to the Szego and Killip-Simon theorems for orthogonal

polynomials on the unit circle (OPUC) and orthogonal polynomials on the real line (OPRL), Simon covers Toda lattices, the moment problem, and Jacobi operators on the Bethe lattice. Recent work on applications of universality of the CD kernel to obtain detailed asymptotics on the fine structure of the zeros is also included. The book places special emphasis on OPRL, which makes it the essential companion volume to the author's earlier books on OPUC.