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	Sommario/riassunto	This work provides the first classification theory of matrix-valued symmetry breaking operators from principal series representations of a reductive group to those of its subgroup. The study of symmetry breaking operators (intertwining operators for restriction) is an important and very active research area in modern representation theory, which also interacts with various fields in mathematics and theoretical physics ranging from number theory to differential geometry and quantum mechanics. The first author initiated a program of the general study of symmetry breaking operators. The present book

pursues the program by introducing new ideas and techniques, giving a systematic and detailed treatment in the case of orthogonal groups of real rank one, which will serve as models for further research in other settings. In connection to automorphic forms, this work includes a proof for a multiplicity conjecture by Gross and Prasad for tempered principal series representations in the case $(SO(n + 1, 1), SO(n, 1))$. The authors propose a further multiplicity conjecture for nontempered representations. Viewed from differential geometry, this seminal work accomplishes the classification of all conformally covariant operators transforming differential forms on a Riemanniann manifold X to those on a submanifold in the model space $(X, Y) = (Sn, Sn-1)$. Functional equations and explicit formulæ of these operators are also established. This book offers a self-contained and inspiring introduction to the analysis of symmetry breaking operators for infinite-dimensional representations of reductive Lie groups. This feature will be helpful for active scientists and accessible to graduate students and young researchers in representation theory, automorphic forms, differential geometry, and theoretical physics