

## Contents

Preface	ix
<b>Expository Papers</b>	1
The Plancherel Formula, the Plancherel Theorem, and the Fourier Transform of Orbital Integrals REBECCA A. HERB and PAUL J. SALLY, JR.	3
Branching Problems of Zuckerman Derived Functor Modules TOSHIYUKI KOBAYASHI	23
Chiral Equivariant Cohomology of Spheres BONG H. LIAN, ANDREW R. LINSHAW, and BAILIN SONG	41
<b>Research Papers</b>	77
Computing Global Characters JEFFREY ADAMS	79
Stable Combinations of Special Unipotent Representations DAN M. BARBASCH and PETER E. TRAPA	113
Levi Components of Parabolic Subalgebras of Finitary Lie Algebras ELIZABETH DAN-COHEN and IVAN PENKOV	129
On Extending the Langlands-Shahidi Method to Arithmetic Quotients of Loop Groups HOWARD GARLAND	151
The Measurement of Quantum Entanglement and Enumeration of Graph Coverings MICHAEL W. HERO, JEB F. WILLENBRING, and LAUREN KELLY WILLIAMS	169
The Dual Pair $(O_{p,q}, \widetilde{OSp}_{2,2})$ and Zuckerman Translation DAN LU and ROGER HOWE	183
On the Algebraic Set of Singular Elements in a Complex Simple Lie Algebra BERTRAM KOSTANT and NOLAN WALLACH	215
An Explicit Embedding of Gravity and the Standard Model in $E_8$ A. GARRETT LISI	231
From Groups to Symmetric Spaces GEORGE LUSZTIG	245

Study of Antiorbital Complexes GEORGE LUSZTIG	259
Adelization of Automorphic Distributions and Mirabolic Eisenstein Series STEPHEN D. MILLER and WILFRIED SCHMID	289
Categories of Integrable $sl(\infty)$ -, $o(\infty)$ -, $sp(\infty)$ - modules IVAN PENKOV and VERA SERGANOVA	335
Binomial Coefficients and Littlewood–Richardson Coefficients for Interpolation Polynomials and Macdonald Polynomials SIDDHARTHA SAHI	359
Restriction of some Representations of $U(p, q)$ to a Symmetric Subgroup BIRGIT SPEH	371