

Contents

Preface <i>Jiří Patera and Pavel Winternitz</i>	vii
Bob Sharp: The Man and the Scientist <i>Philip R. Wallace</i>	ix
Bob Sharp: Teacher, Colleague, Friend <i>J. Harnad</i>	xiii
Publications of Robert T. Sharp	xvii
Participants	xxiii
Symmetries and Currents of Massless Neutrino Fields, Electromagnetic and Graviton Fields <i>Stephen C. Anco and Juha Pohjanpelto</i>	1
Naturalness and Quintessence <i>C. P. Burgess</i>	13
Congruence Subgroups of $\mathrm{PSL}(2, \mathbb{Z})$ <i>C. J. Cummins and S. Pauli</i>	23
Asymptotic $\mathrm{SU}(2)$ and $\mathrm{SU}(3)$ Wigner Functions from the Weight Diagram <i>Hubert de Guise, David J. Rowe, and Barry C. Sanders</i>	31
Physical Applications of a Five-Dimensional Metric Formulation of Galilean Invariance <i>M. de Montigny, F. C. Khanna, and A. E. Santana</i>	43
Variations on Dedekind's Eta <i>Terry Gannon</i>	55
Examples of Berezin–Toeplitz Quantization: Finite Sets and Unit Interval <i>J.-P. Gazeau, T. Garidi, E. Huguet, M. Lachèze-Rey, and J. Renaud</i>	67
A Modified Weierstrass Representation for CMC-Surfaces in Multi-Dimensional Euclidean Spaces <i>A. M. Grundland and W. J. Zakrzewski</i>	77
Boson Realizations of Semi-Simple Lie Algebras <i>Čestmír Burdák and Miloslav Havlíček</i>	87

Stretched Littlewood–Richardson and Kostka Coefficients R. C. King, C. Tollu, and F. Toumazet	99
Group Actions on Compact Hyperbolic Manifolds and Closed Geodesics Peter Kramer	113
Is There an Ultimate Symmetry in Physics? C. S. Lam	125
Formal Characters and Resolution of Infinite-Dimensional Simple A_r -Modules of Finite Degree Daniel Britten and Frank Lemire	131
Fusion Rules and the Patera–Sharp Generating-Function Method L. Bégin, C. Cummins, P. Mathieu, and M. A. Walton	141
Transient Effects in Wigner Distribution Phase Space of a Scattering Problem Marcos Moshinsky	153
R. T. Sharp and Generating Functions in Group Theory Jiří Patera	159
Quasi-Exact Solvability in Nonlinear Optics G. Álvarez, F. Finkel, A. González-López, and M. A. Rodríguez	165
Coherent States, Induced Representations, Geometric Quantization, and Their Vector Coherent State Extensions D. J. Rowe	177
Symmetry Math Video Game Used to Train Profound Spatial-Temporal Reasoning Abilities Equivalent to Dynamical Knot Theory Mark Bodner and Gordon L. Shaw	189
Polytope Sums and Lie Characters Mark A. Walton	203
Subalgebras of Lie Algebras. Example of $\mathfrak{sl}(3, \mathbb{R})$ Pavel Winternitz	215