

# Communications in Mathematical Physics

Volume 155 Number 1 1993

- A. Connes, M. Flato, H. Hironaka, A. Jaffe, V. Jones Editorial 1
- G. A. Elliott, M. Rørdam The Automorphism Group of the Irrational Rotation  $C^*$ -Algebra 3
- E. A. Carlen, E. H. Lieb Optimal Hypercontractivity for Fermi Fields and Related Non-Commutative Integration Inequalities 27
- E. Date, M. Jimbo, M. Okado Crystal Base and  $q$ -Vertex Operators 47
- D. Voiculescu The Analogues of Entropy and of Fisher's Information Measure in Free Probability Theory, I 71
- S. Popa, M. Takesaki The Topological Structure of the Unitary and Automorphism Groups of a Factor 93
- A. Connes, H. Moscovici Transgression and the Chern Character of Finite-Dimensional  $K$ -Cycles 103
- D. Buchholz, S. Doplicher, R. Longo, J. E. Roberts Extensions of Automorphisms and Gauge Symmetries 123
- D. Kastler, D. Testard Quantum Forms of Tensor Products 135
- K. R. Ito Random Walk Representations and the Mayer Expansion in the  $N$ -Vector Model 143
- M. Izumi Subalgebras of Infinite  $C^*$ -Algebras with Finite Watatani Indices. I. Cuntz Algebras 157
- A. Jaffe, A. Lesniewski, K. Osterwalder Stability for a Class of Bilocal Hamiltonians 183
- R. Haag Local Quantum Physics and Models 199
- A. H. Chamseddine, G. Felder, J. Fröhlich Gravity in Non-Commutative Geometry 205

Indexed in *Current Contents*  
Evaluated and abstracted for *PHYS* on *STN*  
CMPHAY 155 (1) 1-218  
July (I) 1993  
Printed on acid-free paper



Springer International