

## Publications

### Peer-Reviewed Journals

1. *Interior Symmetries of Hadrons:  $SO(3,2)$  as a Spectrum Generating Group*  
Intern. J. of Theor. Phys. **36** (1997) 2409
2. *The Time Reversal Operator for Semigroup Evolution* (with A. Bohm)  
Found. of Phys., **27** (1997) 969.
3. *Semigroup Representations of the Poincare Group and Relativistic Gamow Vectors*  
(with A. Bohm, H. Kaldass and P. Kielanowski)  
Phys. Lett. A **264** (2000) 425
4. *Time Asymmetric Quantum Theory and the Ambiguity of the Z-boson Mass and Width*  
(with A. Bohm, N. L. Harshman and H. Kaldass)  
Eur. Phys. J. C **18** (2001) 333
5. *A Note on the Topology of Space-time in Special Relativity*  
Class. Quantum Grav., **18** (2001) 5353
6. *Symmetry Representations in the Rigged Hilbert Space Formulation of Quantum Mechanics*  
(with A. Bohm)  
J. Phys. A: Math. Gen., **35** (2002) 805
7. *Resonance States from Poles of the Relativistic S-Matrix* (with A. Bohm and H. Kaldass)  
Intern. J. Mod. Phys. A **17** (2002) 3749
8. *On Einstein Causality and Time Asymmetry in Quantum Physics*  
J. Phys. A: Math. Gen., **35** (2002) L715
9. *Representation of Semigroups in Rigged Hilbert Spaces: Subsemigroups of the Weyl-Heisenberg Group*  
(with A. Bohm)  
J. Math. Phys., **44** (2003) 930
10. *Relativistic Resonances from S-Matrix Poles* (with A. Bohm and H. Kaldass)  
Fortschr. Phys., **51** (2003) 569
11. *Decaying States and the Causal Poincare Semigroup* (with A. Bohm and H. Kaldass)  
Fortschr. Phys., **51** (2003) 604
12. *Complex Energies and Beginnings of Time Suggest a Theory of Scattering and Decay*  
Annals of Physics, **321** (2006) 2299
13. *Galilean and Dynamical Invariance of Entanglement in Particle Scattering* (with N.L. Harshman)  
Physical Review Letters, **98** (2007) 080406

Also selected to be republished in two other journals:

- Virtual Journal of Nanoscale Science & Technology (March, 2007)
- Virtual Journal of Quantum Information (March, 2007)

14. *Comment on the applications of Hardy class functions in scattering theory* (with M. Gadella)  
J. Phys. A: Math. Theor., **40** (2007) 4665
15. *Tensor Product Structures, Entanglement, and Particle Scattering* (with N.L. Harshman)  
Open Sys. & Information Dyn. **14** (2007) 3
16. *Gamow Vectors in the Bakamjian-Thomas Construction*  
Journal of Geometry and Symmetry in Physics, **11** (2008) 67
17. *Rigged Hilbert Spaces, Eigenfunction Expansions and Commutative Harmonic Analysis*  
(with M. Gadella and F. Gómez-Cubillo)  
Journal of Geometry and Symmetry in Physics, **11** (2008) 23
18. *Hardy Class Functions for Potential Scattering and Decay* (with M. Gadella and F. Gómez-Cubillo)  
Reports on Mathematical Physics, **62** (2008) 129
19. *Bakamjian-Thomas Construction for Quasistable States*  
J. Phys. A.: Math. Theor., **41** (2008) 304025
20. *The Galilean and U(1)-Gauge Symmetry of the Schrödinger's Field* (with V. Colussi)  
Ann. Phys., **323** (2008) 3020
21. *Relativistic Dynamics of Quasistable States I: Perturbation Theory for the Poincaré Group*  
J. Math. Phys., **50** (2009) 042305
22. *Relativistic Dynamics of Quasistable States II: Differentiable Representations of the Causal Poincaré Semigroup*, J. Math. Phys. (In press: July 2009).
23. *Semigroup Integrability of Point-form Dynamics* (with N.L. Harshman)  
Reports on Mathematical Physics (In press: 2009)

### **Work in Progress**

24. *Perturbations of unitary representations of finite dimensional Lie groups*, Preprint, University of Iowa
25. *Perturbation of unitary representations of the Galilei group: mass operators with continuous spectra*  
(with V. Colussi and H. Reich) Preprint, Grinnell College
26. *Spatial contractions of the Poincaré group and the Galilean transformations of Maxwell's equations in the electric limit*,  
(with H. Reich) Preprint, Grinnell College

### **Invited, Peer-Reviewed/Refereed Papers**

27. *Some Little Things about Rigged Hilbert Spaces and Quantum Mechanics*  
(with A. Bohm and M. Gadella)  
In *Generalized functions, operator theory and dynamical systems*, Chapman and Hall/CRC  
Research Notes in Mathematics, 399, I. Antoniou and G. Lumer (Eds.).
28. *A New Topology for an Axiom of Quantum Mechanics* (with A. Bohm)  
In *Irreversible Quantum Dynamics*, Lecture Notes in Physics, Springer (2003),  
F. Bennati and R. Florianini (Eds.)

29. *Gamow Vectors and Time Asymmetric Quantum Mechanics* (with M. Gadella)  
Published in *New Research in Quantum Physics*, V. Krasnoholovets and F. Columbus, Eds,  
(Nova Science, New York, 2004), pp. 45-69. ISBN: 1-59454-001-2.
30. *Rigged Hilbert Spaces in Quantum Physics*  
(with J.-P. Antoine, R. Bishop and A. Bohm)  
in F. Weinert, K. Hentschel, D. Greenberger (eds.): *Compendium of Quantum Physics* (Springer,  
Heidelberg/Berlin/New York 2009)
31. *Rigged Hilbert Spaces for the Dirac formalism and time-symmetric quantum mechanics*  
(with J.-P. Antoine and A. Bohm)  
in F. Weinert, K. Hentschel, D. Greenberger (eds.): *Compendium of Quantum Physics* (Springer,  
Heidelberg/Berlin/New York 2009)

### **Conference Proceedings**

32. *Group Theory and the Hadron Spectrum* (with A. Bohm)  
A. O. Barut Memorial Lectures, Published in *Turkish Journal of Physics* 21 (1997) 289.
33. *SO(3,2) as a Spectrum Generating Group for a Collective Model of Hadron Structure*  
Group 21, *Physical Applications and Mathematical Aspects of Geometry, Groups, and Algebras*,  
V. II; H. D. Doebner, W. Scherer, and C. Schulte (Eds.)
34. *Resonances, Gamow Vectors and Time Asymmetric Quantum Theory* (with A. Bohm and R. Scurek)  
*Rev. Mexi. de Fisica*, 45 (1999) 16.

