

Publication List  
L.C. Biedenharn

*Books*

- Coulomb Excitation*, (with P.J. Brussaard), The Oxford Press, Oxford, U.K. (1965).
- Selected Papers on the Quantum Theory of Angular Momentum*, (with H. van Dam), Academic Press, New York (1965).
- Angular Momentum in Quantum Physics*, Vol. 8 *Encyclopedia of Mathematics and Its Applications*, (with J. D. Louck), Addison-Wesley, Reading, MA, (1981).
- Racah-Wigner Algebra in Quantum Theory*, Vol. 9, *Encyclopedia of Mathematics and Its Applications*, (with J. D. Louck), Addison-Wesley, Reading, MA, (1981).
- Relativistic Models of Extended Hadrons Obeying a Mass-Spin Trajectory Constraint*, (with N. Mukunda and H. van Dam), *Lecture Notes in Physics* 165, A. Bohm and J.C. Dollard, eds., Springer-Verlag, Berlin (1982).
- Racah Algebra and the Contraction of Groups*, W.T. Sharp (foreword by L. C. Biedenharn). L. C. Biedenharn, A.J. van Zanten and E. de Vries, eds., University of Toronto (1984).
- Angular Momentum in Quantum Physics, Theory and Applications*, (with J.D. Louck) Volumes 1 and 2, Russian translation, 'MIR' Publishers, Moscow (1984).
- Symmetries in Science V. Algebraic Systems, Their Representations, Realizations, and Physical Applications*, Bruno Gruber, L.C. Biedenharn and H.D. Doebner, eds., Plenum Press, New York (1991).
- Quantum Group Symmetry and  $q$ -Tensor Algebras*, (with M.A. Lohe) World Scientific, Singapore, (1995).

*Book Chapters*

- "Angular Correlations in Nuclear Spectroscopy," Chapter 5, *Nuclear Spectroscopy II*, Fay Ajzenberg-Selove, ed., Academic Press, New York (1959).
- "Resonance Processes with Fast Neutrons," *Fast Neutron Physics*, Vol. II. Ch. V., (with Willard, Huber and Baumgartner), J. Fowler and J. Marion, ed., Interscience Publishers, New York (1963).

### *Encyclopedia Contributions*

- "Angular Momentum (Quantum Theory)," *McGraw-Hill Encyclopedia of Science and Technology*, McGraw-Hill, New York, 430-432 (1972).
- "Rotation and Angular Momentum," (with H. van Dam and J.D. Louck) *Encyclopedia of Physics*, R.G. Lerner and G.L. Trigg, eds., Addison-Wesley, Reading, MA 889-894 (1981).

### *Journal Articles*

- "Some Calculations Concerning Neutron-Proton Scattering with Tensor Forces," (with J.M. Blatt) *Phys. Rev.* **78** 322A (1950).
- "A Note on Time Reversal and The Dirac Equation," *Phys. Rev.* **82** 100 (1951).
- "The Angular Dependences of Scattering and Reaction Cross Sections," (with J.M. Blatt) *Phys. Rev.* **82** 123 (1951).
- "Can Polarization Effects be Detected in Capture Gamma Radiation?" (with M.E. Rose and G.B. Arfken) ORNL-986 (1951).
- "The Relative Phase of the Interaction Constants for Mixed Invariants in Beta-Decay," (with M.E. Rose) *Phys. Rev.* **83** 459 (1951).
- "Angular Correlation in the Triple Cascade Transitions," (with G.B. Arfken and M.E. Rose) *Phys. Rev.* **83** 586 (1951).
- "A Note on Angular Distribution of Gamma-Radiation for 16 MeV  $C^{12}$ ," (with G.B. Arfken) *Phys. Rev.* **83** 238A (1951).
- "A Note on Isotropy in Nuclear Gamma-Radiation," (with G.B. Arfken and M.E. Rose) ORNL-1018; *Phys. Rev.* **84** 89 (1951).
- "One-Three Gamma-Gamma Angular Correlation," (with G.B. Arfken and M.E. Rose), ORNL-1103; *Phys. Rev.* **86** 619A (1952).
- "Angular Correlation of First and Third Gamma-Rays," (with G.B. Arfken and M.E. Rose), *Phys. Rev.* **86** 761 (1952).
- "Angular Correlation of the Radiations for Deuteron Stripping Reactions," (with K. Boyer and R.A. Charpie), *Phys. Rev.* **88** 517 (1952).
- "Tables of Coefficients for Internal Conversion Angular Correlations," (with M.E. Rose and G.B. Arfken), ORNL-1097 (1952).
- "The Internal Conversion Correlations for Mixed Conversion Transitions," (with M.E. Rose), ORNL-1324 (1952).

- "Tables of the Racah Coefficients," ORNL-1098; Second Edition, ORNL-1501; (1953); (with S. Simon and J.H. VanderSluis) extended Edition ORNL-1697 (1954).
- "Internal Conversion Angular Correlations," (with M.E. Rose and G.B. Arfken) *Phys. Rev.* **85** 5 (1952).
- "Neutron-Proton Scattering with Spin-Orbit Coupling. I. General Expressions," (with J.M. Blatt) *Phys. Rev.* **86** 399 (1952).
- "Some Properties of the Racah and Associated Coefficients," (with J.M. Blatt and M.E. Rose) *Rev. Mod. Phys.* **24** 249 (1952).
- "The Angular Distribution of Scattering of Reaction Cross Sections," (with J.M. Blatt), *Rev. Mod. Phys.* **24** 258 (1952).
- "An Identity Satisfied by Racah Coefficients," *Journal of Math. Phys.* Vol. **31** 287 (1953).
- "A Calculation of the Pro-Electron Angular Correlation for Neutron Decay," (with H.L. Reynolds and D.B. Beard), ORNL-144 (1953).
- "A Variational Principle for Neutron-Proton Scattering with Tensor Forces," (with J.M. Blatt) *Phys. Rev.* **90** 365A (1953).
- "Theory of Angular Correlation of Nuclear Radiations," (with M.E. Rose) *Rev. Mod. Phys.* **25** 729 (1953).
- "The Elastic Scattering of Protons by Alpha Particles," (with S. Sack and G. Breit) *Phys. Rev.* **93** 321 (1954).
- "A Variation Principle for Eigenfunctions," (with J.M. Blatt) *Phys. Rev.* **93** 230 (1954).
- "Neutron-Proton Scattering with Spin-Orbit Coupling. II. Variational Formulation and Effective Range Theory," (with J.M. Blatt) *Phys. Rev.* **93** 1387 (1954).
- "Sargent Diagram and Comparative Half-Lives for Electron Capture Transitions," (with J.K. Major) *Rev. Mod. Phys.* **26** 321 (1954).
- "Coulomb Functions for Large Charges and Small Velocities," (with R.L. Gluckstern, M.H. Hull and G. Breit), *Phys. Rev.* **97** 542 (1954).
- "Theory of the Photoelectric Effect. I. Formal Aspects," (with M.E. Rose), ORNL-1799 (1954).
- "Coulomb Excitation of Nuclear Levels," (with M.E. Rose), ORNL-1789 (1954).
- "Quantum Calculation of Coulomb Excitation," *Phys. Rev.* **99** 629A (1955).
- "Analysis of Angular Distribution Data by Electronic Computers," (with A. Simon) *Phys. Rev.* **98** 1153A (1955).

- "Soluble Problem in the Theory of Coulomb Excitation," (with C.M. Class) *Phys. Rev.* **98** 691 (1955).
- "Quantum Calculation of Coulomb Excitation. I," (with J.L. McHale and R.M. Thaler) *Phys. Rev.* **100** 376 (1955).
- "Coulomb Excitation Directional Correlation," (with M. Goldstein, J.L. McHale and R.M. Thaler) *Phys. Rev.* **100** 436 (1955).
- "Numerical Calculations for the Neutron-Proton System with Tensor Forces," (with M.E. Kalos and J.M. Blatt) *Nucl. Phys.* **1** 233 (1956).
- "Quantum Calculation of Coulomb Excitation. II. Quadrupole Excitation Numerical Results," (with M. Goldstein, J.L. McHale and R.M. Thaler) *Phys. Rev.* **101** 662 (1956).
- "A Note on Sommerfeld's Bremsstrahlung Formula," *Phys. Rev.* **102** 262 (1956).
- "Calculation of Electric Dipole Coulomb Excitation and Dipole Bremsstrahlung," (with R.M. Thaler, M. Goldstein, and J.L. McHale) *Phys. Rev.* **102** 1567 (1956).
- "Some Remarks on the Slowing Down of Neutrons in Hydrogen," (with T.A. Welton) ORNL-2107 (1956).
- "Angular Correlation for the  $(\alpha, \beta, \gamma)$ -type Nuclear Reaction," (with A. Kraus, J. Schiffer, and F. Prosser) *Phys. Rev.* **104** 1667 (1956).
- "Quantum Calculation of Coulomb Excitation. M1 and M1-E2 Mixed Transition and Classical Approximations," (with R. Thaler) *Phys. Rev.* **104** 1643 (1956).
- "Approximation for Deuteron Stripping Reactions on Heavy Target Nuclei," (with K. Boyer and M. Goldstein) *Phys. Rev.* **104** 383 (1956).
- "A Note on the Calculation of the Coulomb Penetration and Coulomb Wave Functions," (with R.M. Thaler) *Nuclear Phys.* **3** 207 (1957).
- "Beta Decay and the Conservation of Parity," (with H.E. Rorschach) *Phys. Rev.* **107** 1075 (1957).
- "Continued Fraction Approximations to the Brillouin-Wigner Perturbation Series," (with R.C. Young and E. Feenberg) *Phys. Rev.* **106** 1151 (1957).
- "A Tabulation of the Radial Coulomb Integrals (m,n, l)," (with M. Goldstein and R.M. Thaler) LA-2106 (1957).
- "Phenomenological Neutron Proton Potentials," (with J.M. Blatt and M. Kalos) *Nucl. Phys.* **6** 359 (1958).
- "Some Properties of the Shift and Penetration Factors in Nuclear Reactions," (with F.W. Prosser, Jr.) *Phys. Rev.* **109** 413 (1958).

- "Tables of Neutron Penetrabilities and Shift Functions," (with J.E. Manahan and J.P. Schiffer) ANL-5846 (1958).
- "A Note on Statistical Tensor in Quantum Mechanics," *Annals of Phys.* 4 104 (1958).
- "Eigenphaseshifts in Terms of Wigner's Nuclear Reaction Theory," (with H.B. Willard) *Proc. Roy. Soc.* LXII 874 (1958).
- "Time-Reversal and Polarized Nuclear Reactions," *Nucl. Phys.* 10 620 (1959).
- "Some Exact Radiating Solutions to Vlasov's Equations," ORNL-2838 (1959).
- "Beta Decay Involving the  $\text{Be}^{8*}$  (2+) State," (with T.A. Griffy) *Nucl. Phys.* 15 636 (1960).
- "The Significance of the Generalized Density of States Function for Nuclear Spectra," (with G.C. Phillips and T.A. Griffy) *Nuclear Physics* 21 327 (1959).
- "Polarization Phenomena in Deuteron Stripping Reactions," *Helvetica Acta*, Supplementum VI, 372 (1960).
- "Wigner Coefficients for the R4 Group and Some Applications," *J. Math Phys.* 2 433 (1961).
- "A Note on Proper Angular Momentum Variables and the Implication for Angular Correlation Theory," (with P.J. Brussaard) *Ann. Phys.* 16 1 (1961).
- "Some Remarks on the Feynmann-Gell-Mann Formulation of the Fermi Interaction," *Il Nuovo Cimento* 22 1097 (1961).
- "Deuteron Stripping by Heavy Nuclei," (with W.D. Barfield and B.M. Bacon) *Phys. Rev.* 125 964 (1962).
- "Nuclear Resonance Effects in Coulomb Excitation," (with T.A. Griffy) *Nucl. Phys.* 32 273 (1962).
- "Some Remarks on the Relativistic Kepler Problem," *Phys. Rev.* 126 845 (1962).
- "A Note on the Angular Distribution of Inelastically Scattered Particles in Coulomb Excitation," (with T.A. Griffy), *Nucl. Phys.* 36 452 (1962).
- "On the Derivation of Asymptotic Expansions of Exponential Integrals with Application to Coulomb Excitation Functions," (with T.A. Griffy and P.J. Brussaard) *Annalen Der Physik* (7) 10 47 (1962).
- "A Partial Wave Analysis of the Inelastic Scattering of Electrons by Nuclei. I. Results for Quadrupole Excitation," (with T.A. Griffy, D.S. Onley and J.T. Reynolds) *Phys. Rev.* 128 833 (1962).
- "Invariant Operators of the Casimir Type," *Phys. Rev. Lett.* 3 69 (1962).

- "Group Theoretical Approaches to Nuclear Spectroscopy," Lectures given at the Fifth Annual Institute for Theoretical Physics, University of Colorado, Boulder, Colorado, W.E. Brittin, B.W. Downs and Joanne Downs, eds., University of Colorado, Interscience Publishers (1963).
- "On the Representations of the Semisimple Lie Groups. I. The Explicit Construction of Invariants for the Unimodular Group in  $N$  Dimensions," *J. of Math. Phys.* **4** 436 (1963).
- "Nuclear Structure Information from Inelastic Electron Scattering," *Eastern Theoretical Physics Conference*, Gordon and Breach, Inc., New York New York (1963).
- "The Generalization of the Wigner-Racah Angular Momentum Calculus," *Phys. Letters* **3**, 254 (1963).
- "Symmetrization in Coulomb Excitation Calculations," (with P.J. Brussaard) *Proceedings of the Third Conference on Reactions Between Complex Nuclei*, Albert Ghiorso, ed., 311 (1963).
- "On the Representations of the Semisimple Lie Groups. II," (with G.E. Baird) *J. of Math. Physics* **4** 1449 (1963).
- "Relativistic Coulomb-Like Green's Function on Closed Form," (with N.V.V.J. Swamy), *Phys. Rev.* **133B** 1353 (1964).
- "A Partial Wave Analysis of the Inelastic Scattering of Electrons by Nuclei," *Proceedings of the International Symposium on Direct Interactions and Nuclear Reaction Mechanism*, E. Clements and C. Villi, eds., Gordon and Breach, New York, 310 (1963).
- "Remarks on the Relativistic Kepler Problem. II. An Approximate Dirac-Coulomb Hamiltonian Processing Two Vector Invariants," (with N.V.V.J. Swamy) *Phys. Rev.* **133**, B1353 (1964).
- "Some Exact Radial Integrals for Dirac-Coulomb Functions," (with J.T. Reynolds and D.S. Onley) *J. Math. Phys.* **5** 411 (1964).
- "Remarks on the Sign of Mixed Multipole Internal Conversion Electron Correlation Parameters," (with M.E. Rose) *Phys. Rev.* **134** B8 (1964).
- "Fractionally Charged Particles in  $SU(3)$  Model," (with Earl Fowler) *Il Nuovo Cimento* **33** 1329 (1964).
- "On the Representations of the Semisimple Lie Groups. III. The Explicit Conjugation Operators for  $SU(n)$ ," (with G.E. Baird) *J. Math. Phys.* **5**, 1723 (1964).
- "On the Representations of the Semisimple Lie Groups. IV. A Canonical Classification for Tensor Operators in  $SU(3)$ ," (with G.E. Baird) *J. Math. Phys.* **5** 1730 (1964).
- "The Generalization of the Wigner-Racah Angular Momentum Calculus. II," *Phys. Letters* **14** 254 (1965).

- "A Remark on Magnetic Moments in the  $SU(4)$  Supermultiplet Model," (with J. Nuyts and N. Straumann) *Phy. Letters* **16** 92 (1965).
- "On the Unitary Representations of  $SU(1,1)$  and  $SU(2,1)$ ," (with J. Nuyts and N. Straumann), *Annales Institut Henri Poincare*, Vol. III, 13 (1965).
- "Intrinsic Superselection Rules of Algebraic Hilbert Space," (with L.P. Horwitz) *Helvetica Phys. Acta* **38** 385 (1965).
- "Some Properties of the  $SU(n)$  Representations," Seminar talk at the International School of Physics, Erice, Sicily, A. Zichichi, ed., Academic Press, New York (1965).
- "On the Representations of the Semisimple Lie Groups. V," (with G.E. Baird) *J. Math. Phys.* **6** 1847 (1965).
- "Group Theory and the Classification of the 'Elementary' Particles," Lectures at CERN, notes published as CERN 65-41 (1965).
- "Complex Angular Momenta and the Groups  $SU(1,1)$  and  $SU(2)$ ," (with W.J. Holman) *Annals of Physics* **39** 1 (1966).
- "On the Generalization of the Isoparity," (with J. Nuyts and H. Ruegg) *Commun. Math. Phys.* **2** 231 (1966).
- "Canonical Definition of Wigner Coefficients in  $U(n)$ ," (with A. Giovannini and J.D. Louck) *J. Math. Phys.* **8** 691 (1967).
- "Unitary Representations of the Non-Compact Family of Groups  $SU(p,1)$ ," *Non-Compact Groups in Particle Physics*, Yutze Chow, ed., Proceedings of the 1968 Conference on Non-Compact Groups in Particle Physics held at the University of Wisconsin-Milwaukee, W.A. Benjamin Inc., New York, New York (1966).
- "The Algebra of Representations of Some Finite Groups," (with Y. Brouwer and W.T. Sharp) *Rice University Studies*, Yutze Chow, ed., Vol. 54, No. 2, (1968).
- "Some Remarks on Representations of the Non-Compact Unitary Groups  $SU(p,1)$ ," (with H. Satz) *Cargese Lectures in Theoretical Physics*, F. Lurcat (Faculte des Sciences, Ossay), ed., Gordon and Breach Science Publishers, Great Britain, (1967).
- "The Algebras of Lie Groups and Their Representations," (with W.J. Holman and D. Kleima) *Group Theory and Its Applications*, I, Ernest M. Loebl, ed., Academic Press, Inc., New York, (1967).
- "On Racah Coefficients as Coupling Coefficients for the Vector Space of Wigner Operators," *Spectroscopic and Group Theoretical Methods in Physics*, S. Cohen, ed., North Holland Publ. Co., Amsterdam (1968).
- "A Remark on Interpreting Majorana's Equation," (with A. Giovannini) *Nuovo Cimento*, **X**, 51A 870 (1967).

- “Combinatorial Structure of State Vectors in  $U(n)$ . I. Hook Patterns for Maximal and Semimaximal States in  $U(n)$ ,” (with M. Ciftan) *J. Math. Phys.* **10** 221 (1969).
- “Three Lectures on Tensor Operators in  $U(n)$ : An Introduction to an “Operator Calculus of Patterns”,” Lecture Notes presented at the ICTP, June (1967).
- “A Pattern Calculus for Tensor Operators in the Unitary Groups,” (with J.D. Louck) *Commun. Math. Phys.* **8** 89 (1968).
- “Generating Functions and Characters of Irreducible Representations of  $SU(3)$  and  $SU(2, 1)$ ,” (with B. Gruber and H.J. Weber) *Proceedings of the Royal Irish Academy*, **67A** 1 (1968).
- “An Elementary Derivation of the Density of States Functions for Continuum States,” (with T.A. Griffy and G.C. Phillips) *Zeitschrift für Physik* **205**, 420 (1967).
- “A General Study of the Wigner Coefficients of  $SU(1, 1)$ ,” (with W.J. Holman) *Annals of Phys.* **47** 205 (1968).
- “Are the Rotational Bands Assigned Correctly in Nuclear  $SU(3)$  Model?” *Phys. Letters* **28B** 537 (1969).
- “A Remark on the Generator-Coordinate Method and the Quasi-Boson Approximation,” (with H. Vi) *Phys. Letters* **27B** 608 (1968).
- “Combinatorial Structure of State Vectors in  $U(n)$ . II. The Generalization of Hypergeometric Functions on  $U(n)$  States,” (with M. Ciftan) *J. Math. Phys.* **10** 1635 (1969).
- “Three-Fluid Hydrodynamical Model and the Proton Distribution in  $^{208}\text{Pb}$ ,” (with R. Mohan and M. Danos) *Phys. Rev. Letters* **23** 868 (1969).
- “Dyon Three-Triplet Model of Hadrons,” (with M.Y. Han) *Phys. Rev. Letters* **24** 118 (1970).
- “Evaluation of Certain Radial Coulomb Integrals Using Symmetry Properties of the Coulomb Field,” (with N.V.V.J. Swamy and R.G. Kulkarni) *J. Math. Phys.* **11** 1165 (1970).
- “On the 27-Plet Unitary Symmetry Operator,” (with J.A. Castilho Alcaras, K.T. Hecht, and G. Neely) *Ann. Phys.* **60** 85 (1970).
- “Isospin Impurities in the Nuclear Ground States,” (with R. Mohan and M. Danos) *Phys. Rev.* **C3** 468 (1971).
- “Canonical Unit Adjoint Tensor Operators in  $U(n)$ ,” (with J.D. Louck) *J. Math. Phys.* **11** 2368 (1970).
- “Nuclear Rotational Bands and  $SL(3, R)$  Symmetry,” (with L. Weaver) *Phys. Letters* **32B** 326 (1970).



- “Manifest Duality Invariance in Electrodynamics and the Cabibbo Ferrari Theory of Magnetic Monopoles,” (with M.Y. Han) *Nuovo Cimento* **2A** 544 (1971).
- “Three-Fluid Hydrodynamical Model of Nuclei,” (with R. Mohan and M. Danos) *Phys. Rev.* **C3** 1740 (1971).
- “Identity Satisfied by the Racah Coefficients of  $U(n)$ ,” (with J.D. Louck) *J. Math. Phys.* **12** 173-177 (1971).
- “An Intrinsically Self-Conjugate Boson Structure: The Symplecton,” (with J.D. Louck) *Annals of Physics* **63** 459 (1971).
- “Gauge Problem in Quantum Field Theory,” (with M.Y. Han) *Lettere al Nuovo Cimento* **2** 1110 (1971).
- “A Two-Component Spherical Factorization of the Klein-Gordan and Kramers Equations,” (with M.Y. Han) *Phys. Letters* **36B** 475-476 (1971).
- “Two-Component Poincaré-Invariant Equations for Massive Charged Leptons,” (with M.Y. Han and H. van Dam) *Phys. Rev. Letters* **27** 1167 (1971).
- “A Possible Mechanism for CP Nonconservation,” (with M.Y. Han and H. van Dam) *Lettere al Nuovo Cimento* **2** 730 (1971).
- “The Representations and Tensor Operators of the Unitary Groups  $U(n)$ ,” (with W.J. Holman) *Group Theory and Its Applications*, Vol. 2, E.M. Loebl, ed., Academic Press, Inc., New York, New York, 1 (1971).
- “A Kinematical Model for Quarks and Hadrons,” (with R.Y. Cusson, M.Y. Han, and J.D. Louck), *Found. of Physics* **2** 149-159 (1972).
- “Comment on ‘Stigma of Dirac Particle in an Even Environment’,” (with M.Y. Han and H. van Dam) *Phys. Rev.* **D5** (1972).
- “Symmetry Relation for Radiating Particles in Attractive Versus Repulsive Coulomb Fields,” (with P.J. Brussaard, C.V. Sheth, N.V.V.J. Swamy and J. Cooper) *Phys. Rev.* **D5** 1288 (1972).
- “On the Evaluation of Multiplicity-Free Wigner Coefficients of  $U(n)$ ,” (with F. Chacon and M. Ciftan), *J. of Math Phys.* **13** 577-590 (1972).
- “Two-Component Alternative to the Dirac Equation,” (with M.Y. Han and H. van Dam) *Phys. Rev.* **D6** 500 (1972).
- “Nuclear Rotational Bands and  $SL(3, R)$  Symmetry,” (with L. Weaver) *Nucl. Phys.* **A185** 1 (1972).
- “The Structure of the Phenomenological Approach to the Adler Anomaly,” Marseille Talk, June 1972. Given at the Colloquium on Group Theoretical Methods in Physics, Centre de Physique Theoretique, Conference Proceedings, June 1972.

- "On the Structural Properties of Canonical Tensor Operators in the Unitary Groups. I. An Extension of the Pattern Calculus Rules and the Canonical Splitting of  $U(3)$ ," (with J.D. Louck, E. Chacon and M. Ciftan) *J. Math. Phys.* **13** 1957-1984 (1972).
- "On the Structure of the Canonical Tensor Operators in the Unitary Groups. II. The Tensor Operators in  $U(3)$  Characterized by Maximal Null Space," (with J.D. Louck) *J. Math. Phys.* **13** 1985 (1972).
- "The Splitting of a Degenerate Level Under the Action of a Symmetry-Breaking Hamiltonian," (with A. Gamba) *Revista Brasileira De Fisica* **12** 319 (1972).
- "Hadronic Regge Sequences as Primitive Realizations of  $SL(3, R)$  Symmetry," (with R.Y. Cusson, M.Y. Han and O.L. Weaver) *Phys. Lett.* **42B** 257-260 (1972).
- "Comment on the Paper Entitled "On the Poincaré Noninvariance of a Recent Alternative to the Dirac Equation"," (with M.Y. Han and H. van Dam) *Lett. Nuovo Cimento* **5** 967 (1972).
- "A Two-Component Alternative to Dirac's Equation," *Acta Physica Austriaca Suppl.* **IX**, 837 (1972).
- "On the Structure of the Canonical Tensor Operators in the Unitary Groups. III. Further Developments of the Boson Polynomials and Their Implications," (with J.D. Louck) *J. Math. Phys.* **14** 1336 (1973).
- "Rotational Bands in Nuclei as Induced Group Representations," (with L. Weaver and R.Y. Cusson) *Annals of Physics* **77** 250 (1973).
- "The Eigenchannel Method and Related Theories for Nuclear Reactions," (with R.F. Barrett, M. Danos, P.P. Delsanto, W. Greiner, and H.G. Wahsweiler) *Reviews of Modern Physics* **45** 44 (1973).
- "Generalization and Interpretation of Dirac's Positive-Energy Relativistic Wave Equation," (with M.Y. Han and H. van Dam) *Phys. Rev.* **D8** 1735-1746 (1973).
- "On a Difficulty in Formulating Relativistic Partonlike Equations," (with H. van Dam and M.Y. Han) *Lettere Al Nuovo Cimento* **7** 408-412 (1973).
- "On Quasi-ambivalent Groups," (with W.T. Sharp, E. de Vries and A.J. van Zanten) *Canadian Journal of Mathematics* **27** No. 2, 246-255 (1975).
- "On Hypergeometric Series Well-Poised in  $SU(n)$ ," (with W. Holman and J.D. Louck), Proceedings of the London Mathematical Society, SIAM *J. Math. Anal.* **7** 529 (1976).
- "The Null Space Concept in Implementing Unitary Symmetry," (with J.D. Louck) *Revista Mexicana de Fisica* **23** 221 (1974).
- "SL3R Symmetry and Nuclear Rotational Structure," Proceedings of the Fifteenth Solvay Conference on Physics, September 1970, *Symmetry Properties of Nuclei*, Gordon and Breach Science Publishers, New York, New York, 85-97 (1974).

- “Non-trivial Zeroes of the Racah  $(6 - j)$  Coefficient,” (with S.H. Koozekanani) *Revista Mexicana de Fisica* **23** 37 (1974).
- “Galilean Subdynamics and the Dual Resonance Model,” (with H. van Dam) *Phys. Rev.* **D9** 471-486 (1974).
- “Giant Multipole Resonances and the Three-Fluid Hydrodynamical Model of Nuclei,” (with H.P. Trivedi and M. Danos) *Phys. Rev.* **C11** 1482 (1975).
- “A Remark on the Thomas-Fermi Equation,” (Invited paper, Sanibel Island Conference in Honor of L.H. Thomas, January 1975) *International Journal of Quantum Chemistry, Symp.* **9**, 31 (1975).
- “Structural Properties of the Canonical  $U(3)$  Racah Functions and the  $U(3) : U(2)$  Projective Functions,” (with J.D. Louck and M.A. Lohe) *J. Math. Phys.* **16** 2408 (1975).
- “The Canonical Resolution of the Multiplicity Problem for  $U(3)$ : An Explicit and Complete Constructive Solution,” (with M.A. Lohe and J.D. Louck) *Group Theoretical Methods in Physics: Fourth International Colloquium, Nijmegen 1975*, Springer-Verlag, 395 (1976).
- “The Kinematics of a Poincaré-Covariant Object Having Indecomposable Internal Structure,” (with H. van Dam) *Phys. Rev.* **D14** 405 (1976).
- “The Symplecton: A Prototype for Semi-Simple Graded Lie Algebras,” (with J.D. Louck) *Letters in Math. Phys.* **1** 233 (1976).
- “Nuclear Rotational-Vibrational Collective Motion with Non-Vanishing Vortex-Spin,” (with O.L. Weaver and R.Y. Cusson) *Ann. of Physics* **102** 493 (1976).
- “The Concept of a Kinematical Stability Group in Implementing Relativistic Symmetry,” (with H. van Dam) *Phys. Lett* **B52** 190 (1976).
- “A Generalization of the Gauss Hypergeometric Series,” (with J.D. Louck) *Journal of Mathematical Analysis and Application*, Academic Press, **59** 423 (1977).
- “A Cautionary Remark on Applying Symmetry Techniques to the Coulomb Problem,” (with D. Aebersold) *Phys. Rev.* **A15** 441 (1977).
- “The Concept of a Kinematical Stability Group in Implementing Relativistic Symmetry,” (with H. van Dam) *Group Theoretical Methods in Physics: Proceedings of the Fifth International Colloquium*, Robert T. Sharp and Bernard Kilman, eds., Academic Press, 419 (1977).
- “Structural Properties of the Self-Conjugate  $SU(3)$  Tensor Operators,” (with M.A. Lohe and J.D. Louck) *J. Math. Phys.* **18** 1883 (1977).
- “A Kinematical Symmetry Group Construction of Hadrons as Regge Trajectories,” *Quantum Theory and the Structures of Time and Space*, Vol. 2, L. Castell, M. Drieschner, C.F. von Weizsacher, eds., Carl Hanser Verlag, Munchen, 201 (1977).

- "Hadronic Regge Sequences as Primitive Realizations of  $SL(3,R)$  Symmetry," *Physics Letters* **73B** 503 "E" (1978).
- "Some Remarks on Implementing Hadrons as Extended Objects with Applications to Dual Models," (with H. van Dam) *Many Degrees of Freedom in Particle Theory*, II. Nato Advanced Study Institute Series B., Vol. 30, H. Satz, ed., Plenum Press, New York, 19 (1978).
- "Exceptional Gauge Groups and Quantum Theory," *J. Math. Phys.* **20**, 269 (1979).
- "An Explicit Model Exhibiting a Generalization of Global Supersymmetry," (with H. van Dam) *Phys. Lett.* **81B** 313 (1979).
- "Exceptional Parafermions in a Hilbert Space Over an Associative Algebra," *Lecture Notes in Physics*, P. Kramer and A. Riekers, eds., **79** 346 (1978).
- "Collective Variables for the Description of Rotational Motion in Many Particle System," (with B. Buck and R.Y. Cusson) *Nuclear Physics A* **317** 205 (1979).
- "On the Coupling of Self-Conjugate Systems with  $SL(3,R)$  Symmetry," (with J.A. Castilho Alcaras), *J. Math. Phys.* **20** 1615 (1979).
- "Representations of the Symmetric Group as Special Cases of the Boson Polynomials in  $U(n)$ ," (with J.D. Louck), *Lecture Notes in Chemistry*, Jürgen Hinze, ed., Springer-Verlag, New York **12** 121 (1979).
- "The Permutation Group and the Coupling of  $n$  Spin  $-1/2$  Angular Momenta," (with J.D. Louck) *Lecture Notes in Chemistry*, Jürgen Hinze, ed., Springer-Verlag, New York **13** 148 (1979).
- "Some Remarks on the Problem of Incorporating Octonions in Quantum Mechanics," (with L.P. Horwitz), *Quantum Theory and the Structures of Time and Space*, Vol. 3, L. Castell, M. Drieschner, C.F. von Weizsacher, eds., Carl Hanser Verlag, Munchen **61** (1979).
- "An Explicit Model Exhibiting Mass and Spin Mixing," (with H. van Dam) *Lecture Notes in Physics*, W. Beigböck, A. Bohm, and E. Takasugi, eds., Springer-Verlag **94** 155 (1979).
- "Non-Associative Algebras and Exceptional Gauge Groups," (with L.P. Horwitz), *Lecture Notes in Physics*, H.D. Doebner, ed., Springer-Verlag, Berlin **139** 152 (1981).
- "Some Remarks on the Resolution of the Multiplicity Problem for Tensor Operators in  $U(n)$ ," (with J.D. Louck) *Group Theoretical Methods in Physics*, Vol. 1, Izdatel'stvo "Nauka," Moscow, **66** (1980).
- "The International Polarization Symposia, 1960-1980: An Overview," Fifth International Symposium, Polarization Phenomena in Nuclear Physics, Part I, AIP Conference Proceedings, Hugh C. Wolfe, ed., **1** (1980).

- “Classification of Wigner Operators by a New Type of Weight Space Diagram,” (with J.D. Louck) *Symmetries in Science*, B. Gruber and R. Millman, eds., Plenum Press, New York 55 (1980).
- “Factorized Hamiltonian of Kinematical Stability Group in Octonionic Ideal of  $C_7$ ,” (with L.P. Horwitz and D. Sepunaru), L.P. Horwitz and Y. Ne’eman, eds., *Annals of the Israel Physical Society*, 3 300 (1980).
- “Quanterion Quantum Mechanics,” (with L.P. Horwitz and D. Sepunaru), L.P. Horwitz and Y. Ne’eman, eds., *Annals of the Israel Physical Society*, 3 303 (1980).
- “Comment on the Motion of a Spin- $\frac{1}{2}$  Particle in the Field of a Magnetic Monopole,” (with H.M. Ruck) *Phys. Rev. D*, 20 2089 (1979).
- “Null Space Concept in Implementing Unitary Symmetry Racah Coefficients,” (with J.D. Louck) *Kinam* 1 3 (1979).
- “Some Quantum Aspects of Theories with Hyper-complex and Non-associative Structure,” (with L.P. Horwitz) Third Johns Hopkins Workshop on Current Problems in High Energy Physics Conference Proceedings, 121 (1980).
- “Erratum: “On the Coupling of Self-conjugate Systems with  $SL(3,R)$  Symmetry,” (with J.A. Castilho Alcaras), *J. Math. Phys.* 21 12 (1980).
- “Composite Systems Viewed as Relativistic Quantal Rotators: Vectorial and Spinorial Models,” (with N. Mukunda and H. van Dam) *Phys. Rev. D* 22 1928 (1980).
- “The Invariant Polynomials Characterizing  $U(n)$  Tensor Operators  $\langle p, q, \dots, q, 0 \dots 0 \rangle$  Having Maximal Null Space,” (with W. Holman III and S. Milne) *Adv. in Applied Math.* 1 390 (1980).
- “A Relation Between the Magnetic Moments of the States on a Regge Trajectory,” (with H. van Dam and N. Mukunda) *Phys. Rev. D* 23 1451 (1981).
- “Quaternions Quantum Mechanics and Adler’s Chromostatics,” (with D. Sepunaru and L.P. Horwitz), *Group Theoretical Methods in Physics*, Cocoyoc, Mexico, K.B. Wolf, ed., Springer-Verlag, New York 51 (1980).
- “Imprimivity Theorem and Quaternionic Quantum Mechanics,” (with P. Truini) *Hadronic J.* 4 981 (1981).
- “A Comment on the Dynamics of  $M_3^8$ ,” (with P. Truini) *Hadronic J.* 4 995 (1981).
- “Relation Between the Magnetic Moments of the States on a Regge Trajectory,” (with H. van Dam and N. Mukunda), *Phys. Rev. D* 23 1451 (1981).
- “On Adler’s Algebraic Chromodynamics,” (with L.P. Horwitz) *Weak Interactions as Probes of Unification*, AIP Conference Proceedings, No. 72, G.B. Collins, L.N. Chang, and J.R. Ficenec, eds., New York, 553 (1981).

- "Non-Associative Algebras and Exceptional Gauge Groups," (with L.P. Horwitz), *Lecture Notes in Physics*, H.D. Doebner, ed., Springer-Verlag, Berlin **139** 152 (1981).
- "Imprimitivity Theorem and Quaternionic Quantum Mechanics," (with P. Truini and G. Cassinelli), *Quantum Theory and the Structures of Time and Space*, Vol. 4, L. Castell, M. Drieschner, C.F. von Weizsäcker, eds., Carl Hanser Verlag, Munich, 236 (1981).
- "Group Theoretic Approaches to Nuclear and Hadronic Collective Motion," *Kinam*, Vol. 4 **3** (1981).
- "A Statistical Mechanical Constraint on Field Theory," (with S. Gupta) SLAC-PUB-2877, (1982).
- "An  $E_6 \times U(1)$  Invariant Quantum Mechanics for a Jordan Pair," (with P. Truini) *J. Math. Phys.* **23** 1327 (1982).
- "Exceptional Groups and Elementary Particle Structures," (with P. Truini) *Physica* **114A** 257 (1982).
- "The 'Sommerfeld Puzzle' Revisited and Resolved," *Foundations of Physics* **13** 1 (1983).
- "Summary Talk: *Quantum Electrodynamics of Strong Fields*," W.Greiner, ed., Plenum Publishing Corp., New York 837 (1983).
- "Some Theoretical Considerations on the  $\sigma(\gamma, p)/\sigma(\gamma, n)$  Ratio in  ${}^4\text{He}$ ," (with P.P. Delsanto, M. Danos and S. Tuan) *Lettere al Nuovo Cimento*, **37** 369 (1983).
- "Quarks and Generalized Quantum Mechanics," (with P. Truini) *Quantum Theory and the Structures of Time and Space*, L. Castell, C.F. von Weizsäcker, eds., Carl Hanser Verlag, Munich, **5** 133 (1983).
- "Kaon Yield per B Decay: A Test for Topless Models?" (with P. Truini, B.F.L. Ward) SLAC-PUB-3103, (1983), and erratum.
- "Relativistic Rotator II. The Simplest Representation Spaces," (with A. Bohm, M. Loewe, and H. van Dam) *Phys. Rev. D* **28** 3032 (1983).
- "The Puzzle of the  $(\gamma, p)/(\gamma, n)$  Ratio in  ${}^4\text{He}$ ," (with H.R. Weller and P.P. Delsanto) invited paper for the *Arabian Science and Engineering*, **8**, 325 (1983).
- "An Umbral Calculus for Polynomials Characterizing  $U(n)$  Tensor Operators," (with R.A. Gustafson and S.C. Milne) *Advances in Mathematics*, **51** 36 (1984).
- "The  $(\gamma, p)$ -to- $(\gamma, n)$  Ratio in  ${}^4\text{He}$  and Charge Symmetry Breaking," (with H.R. Weller, P.P. Delsanto, N.R. Roberson and D.R. Tilley) *Few Body Problems in Physics*, Vol. II, B. Zeitnitz, ed., Elsevier Science Publishers, Amsterdam, 277 (1984).
- "Consequences of the Pauli Principle Applied to a Quark Model Analysis of Light Hypernuclei," (with E.V. Hungerford) *Phys. Lett.* **142B** 232 (1984).

- "Spinorial Relativistic Rotator: The Transformation from Quasi-Newtonian to Minkowski Coordinates," (with A. Bohm, M. Tarlini, H. van Dam and N. Mukunda) *Phys. Rev. D* **30** 409 (1984).
- "On the Structure of Tensor Operators in  $SU_3$ ," (with D.E. Flath) *Commun. Math. Phys.* **93** 143 (1984).
- "Tensor Operators as an Extension of the Universal Enveloping Algebra," *Lecture Notes in Physics*, G. Denardo, G. Chirardi, and T. Weber, eds., Springer Verlag, **201** 486 (1984).
- "Baryons as Quarks in a Skyrmon Bubble," (with Y. Dothan and A. Stern) *Phys. Letters* **146B** 289 (1985).
- "Special Functions and Group Theory in Theoretical Physics," (with R.A. Gustafson, M.A. Lohe, J.D. Louck and S.C. Milne) *Special Functions: Groups Theoretical Aspects and Applications* Oberwolfach, R.A. Askey, et al eds., D. Reidel Pub. Co., Dordrecht, 129 (1984).
- "Quaternion Quantum Mechanics: Second Quantization and Gauge Fields," (with L.P. Horwitz) *Ann. of Physics* **157** 432 (1984), and erratum.
- "A Note on the Multiplicity-Free Unitary Irreps of  $SL(3, \mathbb{R})$ ," (with L. Weaver) *J. Math. Phys.* **26** 18 (1985).
- "Chiral Two-Component Spinors and the Factorization of Kramer's Equation," (with L.P. Horwitz) *Foundations of Physics* **14** 953 (1984).
- "Rotational-Vibrational Coupling in the Skyrme-Soliton Model for Baryons," (with Y. Dothan and M. Tarlini) *Physical Rev. D* **31** 649 (1985).
- "Some Remarks on Using Octonians in Quantum Mechanics," invited paper for Caianiello Festschrift, Salerno, (Italy), 189 (1984).
- "The Jordan Pair Content of the Magic Square and the Geometry of the Scalars in  $N = 2$  Supergravity," (with P. Truini and G. Olivieri) *Lett. in Math. Phys.* **9** 255 (1985).
- "On the Denominator Function for Canonical  $SU(3)$  Tensor Operators," (with M.A. Lohe and J.D. Louck) *J. Math. Phys.* **26** 1458 (1985).
- "Interactions of Quasi-Closed Channels with Open-Channel Continua," (P.P. Delsanto and M. Danos) *Lett. al Nuovo Cimento* **42** 59 (1985).
- "A Comment on Fermionic Tachyons and Poincaré Representations," (with H. van Dam and Y.J. Ng) *Phys. Lett.* **158B** 227 (1985).
- "Some Consequences of the BMZW Anomaly for  $SU(3)$  Skyrmions," (with Y. Dothan) *Proceedings of the Symposium on Anomalies, Geometry, Topology*, W.A. Bardeen and Alan R. White, eds., World Scientific, 504 (1985).
- "Beyond the Enveloping Algebra of  $sl_3$ ," (with D. Flath) *Can. J. Math.* **37** 710 (1985).

- " $U(n)$  Wigner Coefficients, the Path Sum Formula and Invariant G-Functions," (with R.A. Gustafson and S.C. Milne) *Advances in Applied Mathematics* 6 291 (1985).
- "Poincaré's Work on the Magnetic Monopole and its Generalization in Present Day Theoretical Physics," (with Y. Dothan) *Differential Topology - Geometry and Related Fields, and Their Applications to the Physical Sciences and Engineering*, George M. Rassias, ed, Teubner Verlagsgesellschaft, Leipzig, 39 (1985).
- "Monopolar Harmonics in  $SU_f(3)$  as Eigenstates of the Skyrme-Witten Model for Baryons," (with Y. Dothan) *From  $SU(3)$  to Gravity* (Festschrift in honor of Yuval Ne'eman), Errol Gotsman and Gerald Tauber, eds., Cambridge University Press, Cambridge, 15 (1985).
- "Quantum Relativistic Oscillator. III. Contraction Between the Algebras of  $SO(3, 2)$  and the Three-Dimensional Harmonic Oscillator," (with A. Bohm, et al. and H. van Dam) *Phys. Rev. D* 32 2828 (1985).
- "The Quantization of Anomalies and Topological Models for the Baryon," *Quantum Theory and the Structures of Time and Space*, Vol. 6, L. Castell, C.F. von Weizsäcker, eds., Carl Hanser Verlag, München 90 (1985).
- "Possibility of Grating by Laser-Driven Nuclear Excitation," (with K. Boyer and J.C. Solem) *Optical Science and Engineering*, Series 6, Williams C. Stwalley, Marshall Lapp, eds., New York 50 (1986).
- "Nuclear Excitation by Laser-Driven Coherent Outer Shell Electron Oscillations," (with G.C. Baldwin, K. Boyer, and J.C. Solem), *Optical Science and Engineering*, Series 6, AIP Conference Proceedings, No. 146, William C. Stwalley and Marshall Lapp, eds., New York, 52 (1986).
- "Some Properties of the Intertwining Number of the General Linear Group," (with J.D. Louck) *Science and Computers*, (Advances in Mathematics Supplementary Studies, Vol 10), Gian-Carlo Rota, ed., Academic Press, Orlando, Florida, 265 (1986).
- "Three-Graded Exceptional Algebras and Symmetric Spaces," (with P. Truini and G. Olivieri) *Zeitschrift für Physik. Particles and Fields* C33 47 (1986).
- "A Survey of the Group Theoretical Approach to Scattering," (with A. Stahlhofen) *Nuclear Structure, Reactions and Symmetries* Vol. 1, Richard Adlin Meyer and Vladimir Paar, eds., World Scientific, 507 (1986).
- "Topological Groups and a New Approach to Nuclear Physics: Skyrmions," *Proceedings of the XIV Int. Col. on Group Theoretical Methods in Physics*, Y.M. Cho, ed., World Scientific, 318 (1986).
- "Topological Concepts in Nuclear Physics: The Deuteron as a Bi-Skyrmion," (with E. So- race and M. Tarlini) *Symmetries in Science II*, Bruno Gruber and Romuald Lenczewski, eds., Plenum Press, New York, 51 (1986).



- "Old Models Never Die: The Revival of the Skyrme Model," (with Y. Dothan) *Comments Nucl. Part. Phys.* **17** 63 (1987).
- "Model for the Nuclear Effects on the  $t - d - \mu$  Fusing State," (with M. Danos and A. Stahlhofen), NBSIR 87-3532 (Nat. Bureau of Standards), April 1987.
- "How Topological Concepts Lead to Quantum Numbers for Baryons," *Physics of Strong Fields*, Walter Greiner, ed., Plenum Press, New York, 843 (1987).
- "A Group Theoretical Calculation of the  $S$  Matrix for the Dirac-Coulomb Problem," (Jianshi Wu, A. Stahlhofen, and F. Iachello) *J. Phys. A: Math. Gen* **20** 4637 (1987).
- "On the Group Theoretical Approach to Scattering," (with A. Stahlhofen), *Proceedings of the XV International Colloquium on Group Theoretical Methods in Physics*, R. Gilmore, ed., World Scientific, Singapore, 134 (1987).
- "Symmetries of Some Hypergeometric Series: Implications for  $3j$ - and  $6j$ - Coefficients," (with J.D. Louck, W.A. Beyer, and P.R. Stein) *Proceedings of the XV International Colloquium on Group Theoretical Methods in Physics*, R. Gilmore, ed., World Scientific, Singapore 428 (1987).
- "Classical Models for Regge Trajectories," (with H. van Dam, G. Marmo, G. Morandi, N. Mukunda, J. Samuel and E.C.G. Sudarshan) *Int. J. of Mod. Phys.* **2** 1567 (1987).
- "Anomalies in Lagrangian Field Theory," (with M. Danos) *Phys. Rev.* **D36** 3069 (1987).
- "A Calculation of the Deuteron as a Biskyrmion," (with A. Schramm and Y. Dothan) *Phys. Lett.* **B205** 151 (1988).
- "Comment on 'The Strange Polarization of the Classical Atom'," (with L.S. Brown and J.C. Solem) *Am. J. Phys.* **55** 906 (1987).
- "On the Denominator Function for Canonical  $SU(3)$  Tensor Operators. II. Explicit Polynomial Form," (with J.D. Louck and M.A. Lohe) *J. Math Phys.* **29** 1106 (1988).
- "Relativistic Wave Functions on Spinor Spaces," (with H.W. Braden, P. Truini, and H. van Dam) *J. Phys.* **A21** 3593 (1988).
- "Kaon Yield per B Decay: a Test for Topless Models?" (with P. Truini and B.F.L. Ward) *Il Nuovo Cimento* **97** 703 (1987).
- "Comprehensive Theory of Nuclear Effects on the Intrinsic Sticking Probability: I," (with M. Danos and A. Stahlhofen), *AIP Conference Proceedings* **181**, eds, Steven E. Jones, Johann Rafelski, and Hendrik J. Monkhorst, American Institute of Physics, New York, 308 (1989).
- "Comprehensive Theory of Nuclear Effects on the Intrinsic Sticking Probability: II," (with M. Danos and A. Stahlhofen), *AIP Conference Proceedings* **181**, eds. Steven E. Jones, Johann Rafelski, and Hendrick J. Monkhorst, American Institute of Physics, New York, 320 (1989).

- “Solvable Approximate Model for the Harmonic Radiation from Atoms Subjected to Oscillatory Electric Fields,” (with G.A. Rinker and J.C. Solem) *Optical Society of America* B6 221 (1989).
- “A Remark on Possible Violations of the Pauli Principle,” (with P. Truini and H. van Dam) *J. Phys. A. Math. Gen* 22 L67 (1989).
- “Laser Coupling to Nuclei via Collective Electronic Oscillations—a Simple Heuristic Model Study,” (with J.C. Solem) *Gamma-Ray Lasers*, Vol 40, No. 6 of the *Journ. of Quantitative Spectroscopy & Radiative Transfer*, Eds. B. Balko, L. Cohen, and D.A. Sparrow, Pergamon Press, 707 (1988).
- “Recent Progress in Implementing the Tensor Operator Calculus,” (with R. LeBlanc and J.D. Louck) *Symmetries in Science III*, B. Gruber and F. Iachello, eds., Plenum Press, New York, 15 (1989).
- “Some Properties of Generalized Hypergeometric Coefficients,” (with J.D. Louck) *Advances in Applied Mathematics* 9 447 (1988).
- “Group-Theoretic Approach to Scattering: The Dirac Coulomb Problem and Relativistic Supersymmetry,” (with A. Stahlhofen), Proceedings of the XVI International Colloquium on Group Theoretical Methods in Physics, H.-D. Doebner, J.-D. Hennig, T.D. Palev, eds., *Lecture Notes in Physics*, 313 261 (1988).
- “Intrinsic Sticking in  $dt$  Muon-Catalyzed Fusion: Interplay of Atomic, Molecular and Nuclear Phenomena,” (with M. Danos and A. Stahlhofen) *Annals of Physics* 192 158 (1989).
- “Implementation of the  $U(n)$  Tensor Operator Calculus in a Vector Bargmann Hilbert Space,” (with R. LeBlanc) *J. Phys. A* 22 31 (1989).
- “The Quantum Group  $SU_q(2)$  and a  $q$ -analogue of the Boson Operators,” *J. Phys. A* 22 L873 (1989).
- “Some Remarks on Using Octonions in Quantum Mechanics,” *Festschrift in Honour of Eduardo R. Caianiello*, Alberto Giovannini, Ferdinando Mancini, Maria Marinaro, Alberto Rimini, eds., World Scientific, Singapore 208 (1989).
- “A New Class of Symmetric Polynomials Defined in Terms of Tableaux,” (with J.D. Louck) *Adv. in Appl. Math.* 10 396 (1989).
- “Nuclear Collective Motion from a Microscopic Viewpoint,” (with V. Vanagas), *Proceedings of Workshop on Microscopic Models in Nuclear Structure Physics*, M.W. Guidry, J.H. Hamilton, D.H. Feng, N.R. Johnson, and J.B. McGrory, eds., World Scientific 325 (1989).
- “Inhomogeneous Basis Set of Symmetric Polynomials Defined by Tableaux,” (with J.D. Louck) *Proc. Natl. Acad. Sci. USA* 87 1441 (1990).

- “On  $q$ -Tensor Operators for Quantum Groups,” (with M. Tarlini), *Letters in Math. Phys.* **20** 271 (1990).
- “Vector Coherent State Constructions of  $U(3)$  Symmetric Tensor and Their  $SU(3) \supset SU(2) \times U(1)$  Wigner Coefficients,” (with K.T. Hecht) *J. Math. Phys.* **31** 2781 (1990).
- “The Ancestry of the ‘Anyon’,” (with E. Lieb, B. Simon, and F. Wilczek) *Letters Physics Today*, 90 (1990).
- “Some Remarks on Quantum Groups—A New Variation on the Theme of Symmetry,” (with M.A. Lohe) *From Symmetries to Strings: Forty Years of Rochester Conferences*, A. Das, ed., World Scientific, 189 (1990).
- “Induced Representations and Tensor Operators for Quantum Groups,” (with M.A. Lohe) *Quantum Groups*, Proceedings of Workshops, Leningrad, 1990, P.P. Kulish, ed., Springer-Verlag, Berlin (1991).
- “A  $q$ -Boson Realization of the Quantum Group  $SU_q(2)$  and the Theory of  $q$ -Tensor Operators,” Quantum Groups, Proceedings of the 8th International Workshop of Mathematical Physics, Arnold Sommerfeld Institute, Clausthal, FRG July 1989, H.D. Doebner and J.D. Hennig, eds., Springer-Verlag, Berlin Heidelberg, *Lecture Notes in Physics* **370**, 67 (1990).
- “Tensor Operator Formulation of Weyl-Ordered Polynomials,” (with M.A. Lohe and J.D. Louck) *Phys. Rev. D* **43** 617 (1990).
- “Quantum Groups and Basic Hypergeometric Functions,” (with M.A. Lohe) *Quantum Groups, Proceedings of the Argonne Workshop*, T. Curtright, D. Fairlie, C. Zachos, eds., World Scientific, 123 (1991).
- “Symmetries of Quantum Group Coupling Coefficients,” (with M.A. Lohe) *Lecture Notes in Physics*, **379** 193 (1991).
- “Screening and Vertexoperators for  $U(n)$ ,” (with R. LeBlanc and K.T. Hecht) *J. Phys. A: Math Gen.* **24** 1393-1425 (1991).
- “Tensor Operator Structures in Quantum Unitary Groups,” *Differential Geometric Methods in Theoretical Physics*, Proceedings, Rapallo, Italy 1990, *Lecture Notes in Physics* **375** 61-69 (1991).
- “An Overview of Quantum Groups,” *Group Theoretical Methods in Physics*, Proceedings of the XVIII International Colloquium, Moscow, USSR, 4-9 June 1990, V.V. Dodonov and V.I. Man’ko, eds., *Lecture Notes in Physics* **382** 147 (1991).
- “Special Functions Associated with  $SU(3)$  Wigner-Clebsch-Gordan Coefficients,” (with J.D. Louck) *Proceedings of the International School on “Symmetry and Structural Properties of Condensed Matter,”* (September 6-12, 1990, Poznan, Poland) W. Florek, P. Lulek and M. Mucha, eds., World Scientific, Singapore 207-229 (1991).

- “Nuclear Collective Motion from a Group Theoretical Standpoint,” (with P. Truini and G. Cassinelli) *Prog. Theor. Phys.* **85** 1271-1286 (1991).
- “Some Remarks on the Symmetry Approach to Nuclear Rotational Motion,” (with P. Truini) *Elementary Particles and the Universe, Essays in Honor of Murray Gell-Mann*, J.H. Schwarz, ed., Cambridge University Press, Cambridge, 157 (1991).
- “Canonical and Noncanonical Methods in Application of Group Theory to Physical Problems,” (with J.D. Louck) John R. Sabin, et al., eds., *Advances in Quantum Chemistry* **23** 129-204 (1992).
- “Construction of the Unitary Irreps of the Quantum Group  $U_q(n)$  by an Extension of the Borel-Weil Method,” (with M.A. Lohe) *Proceedings of the XX DGM talk, Vol. 1* World Scientific, Singapore, 454-470 (1992).
- “New Relations and Identities for Generalized Hypergeometric Coefficients,” (with A.M. Bincer, M.A. Lohe and J.D. Louck) *Advances in Applied Mathematics* **13**, 62-121 (1992).
- “An Extension of the Borel-Weil Construction to the Quantum Group  $U_q(n)$ ,” (with M.A. Lohe), *Commun. Math. Phys.* **146** 483-504 (1992).
- “Resolving the Problem Posed by Multiplicity in the Unitary Group,” *Group Theory and Special Symmetries in Nuclear Physics*, Proceedings of the International Symposium in Honor of K.T. Hecht, Ann Arbor, Michigan, 19-21 September 1991, J.P. Draayer and J. Janecke, eds., World Scientific, Singapore, 38-48 (1992).
- “Some Remarks on Sticking Fraction Calculations in Muon-Catalyzed Deuterium-Tritium Fusion,” (with A.K. Ciftci) in *Sakharov Memorial Lectures in Physics*, L.V. Keldysh and V. Ya Fainberg, eds., Nova Science Publishers, Inc., New York, 215-227 (1992).
- “The Pattern Calculus for Tensor Operators in Quantum Groups,” (with Mark Gould) *J. Math. Phys.* **33**, 3613-3635 (1992).
- “On the  $q$ -Symplecton Realization of the Quantum Group  $SU_q(2)$ ,” (with M. Nomura) *J. Math. Phys.* **33**, 3636-3648 (1992).
- “Identities for Generalized Hypergeometric Coefficients,” (with J.D. Louck) *Contemporary Mathematics* **138**, 87-97 (1992).
- “The Dirac-Coulomb Problem for the  $\kappa$ -Poincaré Quantum Group,” (with B. Mueller and M. Tarlini) *Phys. Lett. B* **318**, 613-616 (1993).
- “Understanding Geometrical Phases in Quantum Mechanics: An Elementary Example,” (with J.C. Solem) *Foundations of Physics* **23**, 185-195 (1993).
- “The Pattern Calculus for the Quantum Groups  $U_q(U(n))$ ,” (with M. Gould) *Group Theoretical Methods in Physics Proceedings*, M.A. del Olmo, M. Santander, J. Mateos, Guilarte, eds., *Anales de Física Monografias 1*, Ciemat, Madrid, 1, 65-70 (1993).

- “The Pattern Calculus for  $q$ -tensor Operators in the  $q$ -group  $U_q(U(n))$ ,” (with M.D. Gould) Proceedings of the XXI International Conference on Differential Geometric Methods in Theoretical Physics, C.N. Yang, M.L. Ge, X.W. Zhou, eds., *Inst. Mod Phys. A* (Proc. Suppl) **3A**, 3-12 (1993).
- “On Relativistic Coulomb Symmetry,” *Journal of Group Theory in Physics* **1**, 123-137 (1993).
- “Group Theoretical Interpretations of Special Function Identities: Two Examples,” (with A.K. Çiftçi) *Siam J. Math. Anal.* **25** 274-287 (1994).
- “Basic Hypergeometric Functions and the Borel-Weil Construction for  $U_q(3)$ ,” (with M.A. Lohe) *SIAM J. Math. Anal.* **25** 1, 218-241 (1994).
- “A Quantum Poincaré Group and the Dirac-Coulomb Problem,” (with M. Tarlini) *Non-compact Lie Groups and Some of Their Applications*, E.A. Tanner and R. Wilson, eds., Kluwer Academic Publishers, Dordrecht, The Netherlands, 487-495 (1994).
- “On  $Q$ -Analogues of Coherent States,” (with M.A. Lohe) *On Klauder’s Path: A Field Trip*, G.G. Emch, G.C. Hegerfeldt, and L. Streit, eds., World Scientific Publishing Co. Pte. Ltd, Singapore, 115-125 (1994).
- “Representation Theory Approach to the Polynomial Solutions of  $q$ -difference Equations:  $U_q(sl(3))$  and Beyond,” (with V. Dobrev and P. Truini) to be published *J. Math. Phys.*
- “On the Equivalence of the Skyrme-Witten and Large- $N_c$  Quark Models,” (with L.P. Horwitz) *Foundations of Physics.* **24**, 401 (1994)
- “A Basis-Free Approach to Time Reversal for Symmetry Groups,” (with E.C.G. Sudarshan) *Pramana* **43**, 4, 255-272 (1994).
- “The Algebra of Tensor Operators for the Unitary Groups,” *Contemporary Mathematics*, **160** 47-57 (1994).
- “Extending Quantum Group Structure to Poincaré Symmetry,” (with M. Tarlini) *Mathematical Physics Towards the 21st Century*, R.N. Sen and A. Gersten, eds., Ben-Gurion University of the Negev Press, Israel, 53-58 (1994).
- “Time Reversal For Systems with Internal Symmetry,” (with E.C.G. Sudarshan) *Foundations of Physics.* **25**, 139 (1995)
- “Symmetry Properties of Matrix Elements of Canonical  $SU(3)$  Tensor Operators,” (with M.A. Lohe and H.T. Williams) *J. Math. Phys.* **35**, 12, 6672-6684 (1994).
- “Some Remarks on Time-Reversal Non-Invariance in Weak Interactions,” *A Gift of Prophecy*, E.C.G. Sudarshan, ed., World Scientific Pub. Co., Singapore (1995).
- “Quarks in the Skyrme-’t Hooft-Witten Model,” (with L.P. Horwitz) *Zeitschrift für Physik C.* **65**, 551 (1995) [arXiv:hep-th/9503138]

- “A Concise Introduction to Quantum Groups,” to be published in *Quantum Groups and Their Applications in Physics, Proceedings of the International School of Physics “Enrico Fermi,”* Varenna, Italy 28 June - 8 July 1994.
- “Quantum Groups as a Model of Quantized Space,” (with M.A. Lohe) to be published in *Proceedings of Nonlinear, Dissipative, Irreversible Quantum Systems,* Arnold Sommerfeld Institute, Technical University of Clausthal, Germany, August 15-19, 1994.
- “A Dual Structure for the Quantal Rotation Group  $SU(2)$ ,” (with M.A. Lohe) to be published in *Symmetries of Science VIII.* Proceedings of Symposium: Symmetries in Science VIII, Kloster Mehrerrau, Bregenz, Austria, August 8-12, 1994.
- “Coordinates of the Quantum Plane as  $q$ -Tensor Operators in  $U_q(su(2) * su(2))$ ,” (with M.A. Lohe) to be published in *Lett. Math. Phys.* (1995).
- “The Fundamental and Universal Nature of Boltzmann’s Constant,” (with J.C. Solem) to be published in Proceedings Theoretical Physics Symposium in honor of Paulo Leal Ferreira, São Paulo, Brazil, August 7-11, 1995.