Lochlainn O'Raifeartaigh : Curriculum Vitae

Degrees

B.Sc. (Exp. and Math. Physics) First-Class Honours, Nat. Univ. Ireland 1953

M.Sc. (Math. Science) First-Class Honours, Nat. Univ. Ireland 1956

Ph.D. Univ. of Zurich (Theor. Phys. Supervisor W. Heitler) 1960

Long-Term Positions

Studentship, Dublin Inst. f. Advanced Studies (Supervisor J. L. Synge) 1956-7

Research Associate, Zurich University (Supervisor W. Heitler) 1958-61

Assistant Professor, Dublin Inst. f. Advanced Sudies 1961-64

Visiting Associate Professor, Syracuse University 1964-5

Visiting Professor, Syracuse University 1965-6

Professor, Syracuse University 1966-7

Member, Princeton Inst. of Advanced Study 1967-8

Senior Professor, Dublin Institute f. Advanced Studies 1968-

(Director, School of Theor. Physics 1970-74)

Member, Inst. des Hautes Etudes Scientifiques, Bures-sur-Yvette 1975-6 and 1983-4

Short-Term (1-3 month) Visiting Positions

Matscience (Madras) Winter 1963-4 Argonne Nat. Lab. (USA) 1966 and 1968 Battelle Institute (Seattle) 1969 MIT 1970 Chalmers Tech. Univ. (Goteborg) 1971 Univ. of Naples 1969, 1980 and 1986 Univ. of Zurich 1977 and 1990 Univ. of Milan 1980 and 1984 Univ. of Louvain-la-Neuve 1982 and 1988 Univ of Southampton 1986 Univ. of Warsaw 1990 Syracuse Univ. 1978 and 1986 Univ. of Erlangen 1995 and Winter 1998-99

Winter/Spring/Summer School Lectureships

Madison (Wisconsin) 1965 Boulder (Colorado) 1965 and 1968 Nato (Istanbul) 1971 and 1978 Zakopane (Poland) 1972 and 1975 Aspen (Colorado) 1974 Karlsruhe 1976-7-8 and 1991 Lausanne 1977 Primorsko (Bulgaria) 1977 PSI Institute (Zuoz) 1977, 1991 and 1998 Bielefeld 1978 UNAM (Mexico) 1979 Schladming 1981 Karpacz (Poland) 1981 Unesco (Adana) 1985 Varna (Bulgaria) 1987 Durham 1992 Mittel-Deutches-Combo 1998-99 Tbilisi 1999

Memberships, Honours

Member, Royal Irish Academy 1963-

Member, Academia Europaea 1991-

Fellow, Inst. of Physics 1990-

Fellow, Japan Society for Promotion of Science 1995

Humbold Award 1996

Wigner Medal (for Applications of Group Theory in Physics) 2000

Editorial Boards

Acta Applicandae Mathematicae J. Math. Phys.   Journ. Phys. A

LOR: Bibliography

Books

Author: *Lectures on Local Lie Groups and Their Representations*
Report No. 25 Madras Inst. for Math. Science (1964)

Author: *The Dawning of Gauge Theory* Princeton Univ. Press (1997)

Author: *Group Structure of Gauge Theory* Cambridge Univ. Press (1986/87)

Editor: *General Relativity: J.L. Synge Festschrift* Clarendon Press, Oxford (1972)

Cassette

Einstein and the Theory of Relativity with C. Lanczos
Audio-Visual Aids, London (1974)

Anthologies

Lorentz Invariance and Internal Symmetry
Phys. Rev. **B139** (1965) 1052
in *Group Theory in Nuclear and Particle Physics*
ed. F. Dyson, Benjamin (1966)

Spontaneous Symmetry Breaking for Chiral Scalar Superfields
Nucl. Phys **B96** (1975) 331
in *Supersymmetry and Supergravity*
eds. S. Ferrara et al. World Scientific (1987)

Toda Theory and W-Algebra from a Gauged WZNW Point of View
Ann. Phys. **203** (1990) 76, with J. Balog et al.
in *W-Symmetry*
eds. P. Bouwknecht and K. Schoutens, World Scientific (1994)

Gauge Theory: The Gentle Revolution
in *Mathematical Physics 2000*
eds. A. Fokas et al., Imperial College Press, 2000

* *Walter Heitler* with G. Rasche
in *Irish Mathematicians of this Century*
ed. K. Heuston, Univ. Coll. Dublin Press (2000)

Supersymmetric Higgs Potentials
in *The Supersymmetric World : the Beginnings of the Theory*
eds. G. Kane and M. Shifman, World Scientific (2000) 145

Reviews

1. *Broken Symmetry*
   Group Theory and its Applications
   ed. E. Loebl, Academic Press (1968) 469

2. *Unitary Representations of Lie Groups in Quantum Mechanics*
   (Battelle Seattle 1969) Rencontres on Group Representations in Mathematics
   and Physics
   ed. V. Bargmann, Springer Lecture Notes in Physics **6** (1970) 144

3. *Realizations of the Unitary Representations of the Inhomogeneous Space-Time
   Groups*
   I. General Structure,
   Fort. d. Physik **22** (1974) 111,
   II. Covariant Realizations of the Poincaré Group,
   Fort. d. Physik **22** (1974) 131
   with U.H. Niederer

4. *Lecture Notes on Supersymmetry*
   Communications DIAS Series A No. 22 (1975)

5. *Hidden Gauge Symmetry*
   Reports on Progress in Physics **42** (1979) 159

6. *Recent Developments in Finite Energy (Topological) Monopole Theory*
   Acta Physica Austriaca Suppl.**XXIII** (1981) 525, with S. Rouhani

7. *Axial Anomalies*
   Proc. (Zuoz, Switzerland 1990) Spring School on Prospects of Hadronic Physics
   at Low Energy
   ed. M.P. Locher. PSI Institute, Villigen (1990) 177

8. *On Hamiltonian Reductions of the Wess-Zumino-Novikov-Witten Theories*
   Physics Reports **C222** (1992) 1, with L. Fehér et al.

9. *The Evolution of the Gauge-Principle*
   Bulletin of Asian Association of Physical Societies **6** (1996) 2

10. *The Intertwining of Affine Kac-Moody and Current Algebras*
    40th Anniversary Volume of the IHES, Bures-sur-Yvette (1999) and
    Intern. J. Mod. Phys. **13** (1999) 3009

11. *Review of Seiberg-Witten Theory*
    Lectures (Kloster Banz, Germany 1997) at the Strong Interaction Study Days on
    Recent Developments in Strong Interaction Physics
    eds. O. Jahn and A. Oppelt, Erlangen University (1999)

12. *Gauge Theory: Historical Origins and Some Modern Developments*
    Rev. Mod. Phys **72** (2000) 1, with N. Straumann

Journal Articles
1958-64

1. *Fermi Coordinates*
   Proc. Roy. Ir. Acad. **59A** (1958) 15

2. *A Static Generalization of the Einstein Universe*
   Proc. Roy. Soc. **245A** (1958) 202

3. *A Property of Empty Space-Time*
   Proc. Roy. Soc. **246A** (1958) 299, with J. L. Synge

4. *The Proton-Neutron Mass-Difference According to Meson-Theory*
   Nuovo Cim. **14** (1959) 376, with B. Sredniawa and Ch. Terreaux

5. *On a Convergent Non-Local Field Theory*
   Il Nuovo Cim. **16** (1960) 785, with E. Arnous and W. Heitler

6. *The S-Matrix in the Non-Local Field Theory of Arnous and Heitler*
   Helv. Phys. Acta **33** (1960) 783

7. *Further Investigations on the Non-Local Convergent Field Theory*
   Helv. Phys. Acta **34** (1961) 554, with Y. Takahashi

8. *The Dirac Matrices and the Signature of the Metric Tensor*
   Helv. Phys. Acta **34** (1961) 545

9. *Change of Variables and Equivalence Theorems in Quantum Field Theories*
   Nucl. Phys. **28** (1961) 529, with S. Kamefuchi and A. Salam

10. *Riemannian Spaces of N Dimensions which contain Fermi Subspaces of N-1 Dimensions*
    Proc. Roy. Ir. Acad. **62A** (1962) 63

11. *On the Validity of the Crossing Theorem*
    Nucl. Phys. **35** (1962) 571

12. *Probability-Conserving Transformations and Superselection Rules in Quantum Theory*
    Ann. Phys. **25** (1963) 155, with G. Rasche

13. *On a Generalization of the Gell-Mann Rosenfeld Triangle for Σ-Decays*
    Phys. Lett. **3** (1963) 197, with R.F. O'Connell

14. *On a Generalized Commutation Relation*
    Proc. Roy. Ir. Acad. **62A** (1963) 93, with C. Ryan

15. *S-Theorem and Construction of the Invariants of the Semisimple Compact Lie Algebras*
    J. Math. Phys. **5** (1964) 1796, with B. Gruber

16. *Origin of Unitary Symmetry and Charge Conservation in Strong Interactions*
    Phys. Rev. **B136** (1964) 1092, with E.C.G. Sudarshan and T.S. Santhanam

17. *Uniqueness of the Harmonic Oscillator Commutation Relation*
    Proc. Roy. Ir. Soc. **63A** (1964) 69, with B. Gruber

Journal Articles
1965-69

18. *A Survey of the Heitler-Arnous Non-Local Field Theory*
    Proc. Roy. Ir. Acad. **64A** (1965) 93, with J.C. Guillot and W. Jaus

19. *Internal Symmetry and Lorentz Invariance*
    Phys. Rev. Lett. **14** (1965) 332

20. *Mass-Differences and Lie-Algebras of Finite Order*
    Phys. Rev. Lett.**14** (1965) 575

21. *Lorentz Invariance and Internal Symmetry*
    Phys. Rev. **B139** (1965) 1052

22. *Nucleon Magnetic Moments in Covariant Version of Wigner's Supermultiplet Theory*
    Phys. Rev. Lett. **14** (1965) 755 with A.J. Macfarlane and E.C.G. Sudarshan

23. *Characteristic Non-Invariance Groups of Dynamical systems*
    Phys. Rev. Lett. **15** (1965) 1041, with N. Mukunda and E.C.G. Sudarshan

24. *Group Theory of the Kepler Problem*
    Phys. Lett. **19** (1965) 322, with N. Mukunda and E.C. Sudarshan

25. *Strong Decay Rates and SU_3-A Comparison and Critique*
    Nuovo. Cim. **45** (1965) 169, with M. Goldberger, R. Musto and J. Leitner

26. *Self-Consistent Equations and Self-Coupling of Vector Mesons*
    Phys. Rev. **158** (1967) 1589, with O. Fleischman, R. Musto and P.S. Rao

27. *Relationship of the Internal and External Multiplicity Structure of Compact Simple Lie Groups*
    J. Math. Phys. **8** (1967) 536, with A.J. Macfarlane and P.S. Rao

28. *Current Algebra and $\eta \to 3\pi$ Decays*
    Nuovo. Cim. **48** (1967) 830, with R. Graham and S. Pakvasa

29. *Mass-Splitting Theorem for Non-Unitary Group Representations*
    Phys. Rev. **161** (1967) 1571

30. *Mass-Splitting Theorem for Translationally-Invariant Non-Integrable Lie Algebras*
    Phys. Rev. **164** (1967) 2000

31. *A Mass-Splitting Theorem for General Definitions of Mass*
    Phys. Rev. **171** (1968) 1698, with A. Böhm

32. *Some Properties of Ladder Operators*
    J. Math. Phys. **9** (1968) 738, with S. Komy

32A. *Linear algebra and the Structure of Matter*
    Ir. Math. Teachers Assoc. Newsletter **11** (1968) 1

33. *Unitary representations of SL(2,C) in an E(2) Basis*
    J. Math. Phys. **10** (1969) 21, with S-J. Chang

34. *SL(2,C) in an Infinite-Momentum E(2) Basis and the Calculation of Form Factors*
    Phys. Rev. **169** (1968) 1275, with S.-J. Chang and J. Kuriyan

35. *Spacelike Solutions of Infinite-Component Wave Functions*
    Phys. Rev. **170** (1968) 1316, with S-J. Chang

36. *Coupling of the Spacelike and Timelike Wave functions at Infinite Momentum*
    Phys. Rev. **171** (1968) 1587, with S-J. Chang

37. *Saturation of the Isospin-Factored Current Algebra at Infinite Momentum*

Phys. Rev. Lett. **21** (1968) 1026, with S.-J. Chang and R. Dashen

38. *Properties of Current Algebra at Infinite Momentum*
    Phys. Rev. **182** (1969) 1805, with S-J. Chang and R. Dashen

39. *Momentum-Transfer-Independent Angular Relations and Solutions to
    the Isospin-Factored Current Algebra*
    Phys. Rev. **182** (1969) 1819, with S.-J. Chang and R. Dashen

40. *Two-variable Expansions of Relativistic Amplitudes and the Subgroups of the
    SU(2,1) Group*
    Nucl. Phys. **B11** (1969) 39, with W. Montgomery and P. Winternitz

Journal Articles
1970-74

41. *On the Saturation of Non-Factored Current Algebra at Infinite Momentum with Simplified Angular Condition*
   Proc. Roy. Ir. Acad. **70A** (1970) 47 with I. Khan and U. Niederer

42. *Wave Equations and Saturation of Current Algebra for $I = \frac{1}{2}$*
   Phys. Rev. **D4** (1971) 1896, with U. Niederer

43. *Scattering of Particles with Spin; Mackey-State Formulation*
   Nucl. Phys. **B49** (1972) 221, with A. Balachandran and J. Nilsson

43A. *Fixed-Point Theorem for the Poincaré Group*
   Internat. J. Theor. Phys. **8** (1973) 465, with G. B. Mainland

44. *Simple Calculation of Wigner Rotations as Functions of s and t. Application to Scattering and Crossing Properties*
   Theor. Math. Phys. **19** (1974) 201, with J. Gomatam and D. Tchrakian

45. *Noncompact Lie-Algebraic Approach to Unitary Representations of SU(1,1): Role of the Confluent Hypergeometric Equation*
   J. Math. Phys. **15** (1974) 380, with W. Montgomery

46. *Derivation of Unified Gauge Theory from a Generalized Minimal Principal*
   Nuovo. Cim. Lett. **10** (1974) 733, with G. B. Mainland

47. *Point Transformations and Renormalization in the Unitary Gauge*
   Nucl. Phys. **B79** (1974) 503, with G.B. Mainland and T.N. Sherry

Journal Articles
1975-79

48. *Point Transformation and Renormalization in the Unitary Gauge for Non-Abelian Fields*
    Phys. Rev. **D12** (1975) 489, with G.B. Mainland

49. *Weight Diagrams for Superfields*
    Nucl. Phys. **B89** (1975) 418

50. *Spontaneous Breakdown of Internal Symmetry in Internal Symmetry $\otimes$ Supersymmetry*
    Phys. Lett. **B56** (1975) 41

51. *Spontaneous Symmetry Breaking for Chiral Scalar Superfields*
    Nucl. Phys. **B96** (1975) 331

52. *Asymptotic Freedom, Infrared Convergence and Supersymmetry*
    Nucl. Phys. **B99** (1975) 150, with S. Browne and T. Sherry

53. *Rapidity Amplitudes and their Fourier Transforms*
    Phys. Rev. **D13** (1976) 99, with B. Durand

54. *Effective Fields and Discontinuities in the Effective Potential*
    Nucl. Phys. **B111** (1976) 501, with G. Parravicini

55. *Effective Potential for Chiral Scalar Superfields*
    Nucl. Phys. **B111** (1976) 516, with G. Parravicini

56. *Covariant Wave-Equations, the Galilei Group and the Magnetic Moment of the Electron*
    Ann. Inst. H. Poincaré **A26** (1977) 313, with U. Niederer

57. *Gauge and Representation-Independent Proof of the Guth-Weinberg Theorem*
    Nuovo. Cim. Lett. **18** (1977) 205

58. *Static Finite-Energy Solutions of Gauge Fields with Separated Radial Variable*
    Phys. Lett. **B67** (1977) 198, with L. Michel and K.C. Wali

59. *Radially Separated Monopole Solutions in Non-Abelian Gauge Models*
    Phys. Rev. **D15** (1977) 3641, with L. Michel and K.C. Wali

60. *Mass-Spectrum for Monopoles of Integral Isospin: Bag-Model as the High Isospin Limit*
    Phys. Lett. **B72** (1978) 465, with J. Rawnsley

61. *Axiomatic or Model-Independent Approach to the Symmetries of the Elementary Particles*
    Czech. J. Phys. **B29** (1979) 81

62. *Magnetic-Monopole Interactions*
    Phys. Rev. **D20** (1979) 1941 with S.Y Park and K.C. Wali

Journal Articles
1980-85

63. *On the Zeros of the Higgs Field for Axially Symmetric Multi-Monopole Configurations*
    Phys. Lett. **B93** (1980) 151, with P. Houston

64. *On the Charge Distribution of Static Axial and Mirror Symmetric Monople Systems*
    Phys. Lett. **B94** (1980) 153, with P. Houston

65. *On Axially-Symmetric Finite-Energy Monopole Configurations*
    Zeit. f. Physik **C8** (1981) 175, with P. Houston

66. *Twisted Axial Symmetry and Finitely Separated Monopoles*
    Phys. Lett. **B105** (1981) 177, with S. Rouhani

67. *Rings of Monopoles with Discrete Axial Symmetry: Explicit Solution for $N = 3$,*
    Phys. Lett. **B112** (1982) 143, with S. Rouhani

68. *Explicit Solution of the Corrigan-Goddard Conditions for n Monopoles for Small Values of the Parameters*
    Phys. Lett **B112** (1982) 369, with S. Rouhani and L.P. Singh

69. *On the Finitely Separated Two-Monopole Solution*
    Nucl. Phys. **B206** (1982) 137, with S. Rouhani and L.P. Singh

70. *On the Stability of the SU(2) Separated Two-Monopole Configuration*
    Phys. Lett **B121** (1983) 151, with S. Rouhani

71. *Effective Potential for Non-Convex Potentials*
    Nucl. Phys. **B212** (1983) 268, with Y. Fujimoto and G. Parravicini

72. *A Note on Supersymmetry Breaking in 1+1 Dimensions*
    Nucl. Phys. **B218** (1983) 484, with T. Murphy

73. *Effect of the Renormalization Group on the Symmetry Breaking Patterns of SU(n) Higgs Potentials*
    Nucl. Phys. **B229** (1983) 509, with T. Murphy

74. *Symmetry Breaking and Renormalization Effects for an SU(n) Model with Two Scalar Fields*
    Nucl. Phys. **B248** (1984) 365, with T. Murphy and M. Yamada

75. *Non-Maximal and Disconnected Stability Groups: SU(3) Counter-Example to Michel Conjecture,*
    Phys. Letters **B154** (1985) 159, with J. Burzlaff and T. Murphy

Journal Articles
1986-89

76. *Absolute Minima of a SO(10) Invariant Higgs Potential*
    Nucl. Phys. **B267** (1986) 203
    with O. Kaymakcalan, L. Michel, K.C. Wali and W.D. McGlinn

77. *The Constraint Effective Potential*
    Nucl Phys. **B271** (1986) 653, with H. Yoneyama and A. Wipf

78. *The U(1)-Anomaly, the Non-Compact Index Theorem and the*
    (Supersymmetric) BA-Effect
    Phys. Letters **B 175** (1986) 433, with R. Musto and A. Wipf

79. *Scattering Theory, U(1) Anomaly and Index Theorems for Compact*
    and Non-Compact Manifolds
    Nucl. Phys. **B293** (1987) 559, with P. Forgacs and A. Wipf

80. *WKB Properties of the Time-Dependent Schrödinger System.*
    Foundations of Physics **18** (1988) 307, with A. Wipf

81. *Gravitation and the Unification of the Fundamental Forces*
    Ir. Astronom. Journ, **18** (1988) 196

82. *Monopole-Charge Instability*
    Intern. J. Mod. Phys. **A3** (1988) 665, with P. Horváthy and J. Rawnsley

83. *Separating the Dyon System*
    Phys. Rev. **D40** (1989) 666, with L. Fehér and P. Horváthy

84. *Cartan-Preserving Automorphisms of Untwisted and Twisted Kac-Moody Algebras*
    J. Math. Phys. **30** (1989) 1921, with N. Gorman and W. McGlinn

85. *A Unified Approach to the Computation of Central Terms*
    in Kac-Moody and Virasoro Algebras
    Intern. J. Mod. Phys. **A4** (1989) 1235, with N. Gorman, W. McGlinn
    and D. Williams

86. *A Streamlined Highest Weight Derivation of the Bilinear Virasoro Centre*
    Mod. Phys. Lett. **A4** (1989) 1789, with N. Gorman and W. McGlinn

87. *Applications of Chiral Supersymmetry for Spin Fields in Self-Dual Backgrounds*
    Intern. J. Mod. Phys. **A4** (1989) 5277, with L. Feher and P. Horvathy

88. *Stability of Spontaneous Symmetry Breaking in a Class of SO(10) models*
    Phys. Rev. **D39** (1989) 3110, with J. Basecq and S. Meljanic

89. *Covariant Light-Cone Algebra*
    Nucl. Phys. **B318** (1989) 281, with J. Balog

90. *Consistency of String Propagation on Curved Space-Times. An SU(1,1) Based*
    Counterexample
    Nucl. Phys. **B325** (1989) 225, with J. Balog, P. Forgacs and A. Wipf

91. *Liouville and Toda Theories as Conformally Reduced WZNW Theories*
    Phys. Lett. **B227** (1989) 214, with J. Balog, L. Feher, P. Forgacs and A. Wipf

Journal Articles
1990-94

92. *Toda Theory and W-Algebra from a Gauged WZNW Point of View*
    Ann. Phys. **203** (1990) 76, with J. Balog, L. Fehér, P. Forgacs and A. Wipf

93. *Kac-Moody Realization of W-Algebras*
    Phys. Letters **B244** (1990) 435, with J. Balog, L. Fehér, P. Forgacs and A. Wipf

94. *Conformally Reduced WZNW Theories and Two-Dimensional Gravity*
    Phys. Lett. **B251** (1990) 361, with A. Wipf

95. *Quantum Equivalence of Constrained WZNW and Toda Theories*
    Phys. Letters **B258** (1991) 359, with P. Ruelle and I. Tsutsui

96. *On the Origin of the Aharonov-Bohm Effect*
    Comments. Nucl. Part. Phys. **20** (1991) 15, with N. Straumann and A. Wipf

97. *Virasoro Operators for Arbitrarily Twisted Kac-Moody Algebras*
    Intern. J. Mod. Phys. **A7** (1992) 2547, with N. Gorman, W. McGlinn
    and M. McGettrick

98. *W-Algebras for Generalized Toda Theories*
    Commun. Math. Phys. **143** (1992) 333, with P. Ruelle, I. Tsutsui and A. Wipf

99. *Generalized Toda Theories and W-Algebras Associated with Integral Gradings*
    Ann. Phys. **213** (1992) 1, with L. Fehér, P. Ruelle and I. Tsutsui

100. *Rational vs. Polynomial Character of $\mathbf{W_n^1}$-Algebras*
    Phys. Letters **B283** (1992) 243, with L. Fehér, P. Ruelle and I. Tsutsui

101. *The Spin-Statistics Connection from Homology Groups of Configuration Space
    and an Anyon Wess-Zumino Term*
    Intern. Journ. Mod. Phys. **A7** (1992) 6887
    with A. Balachandran, W. McGlinn, S. Sen and R. Sorkin

102. *Topological Spin-Statistics Theorems for Strings*
    Mod. Phys. Lett. **A7** (1992) 1427, with A. Balachandran et al.

103. *Aharonov-Bohm Effect in the Presence of Superconductors*
    Foundations of Physics **23** (1993) 703, with N. Straumann and A. Wipf

104. *Gauge Conditions for the Constrained-WZNW-Toda Reductions*
    Phys. Letters **B301** (1993) 41, with J-L. Gervais, A. Razumov and M. Saveliev

105. *The Vacuum Preserving Lie Algebra of a Classical W-Algebra*
    Phys. Letters **B316** (1993) 275, with L. Fehér and I. Tsutsui

106. *On the Completeness of the Set of Classical W-Algebras obtained
    from DS Reductions*
    Commun. Math. Phys. **162** (1994) 399, with L. Fehér et al.

107. *Non-Trivial Non-Canonical W-Algebras from Kac-Moody reductions*
    Phys. Letters **B333** (1994) 353, with G. A. da Costa

108. *Quantization of a Relativistic Particle on the SL(2,R) Manifold based on
    Hamiltonian reduction*
    Phys. Letters **B 336** (1994) 388, with I. Tsutsui and G. Jorjadze

Journal Articles
1995-2001

109. *Morse Theory and the Topology of Configuration Space*
Inter. Journ. Mod. Phys. **A11** (1996) 823,
with W. McGlinn, S. Sen and R. Sorkin

110. *Canonical Quantization of Interacting WZW Theories*
Nucl. Phys. **B460** (1996) 203, with C. Ford

111. *Weyl Gauging and Conformal Invariance*
Nucl. Physics **B495** (1997) 433, with A. Iorio, I. Sachs and C. Wiesendanger

112. *Uniqeness of the Seiberg-Witten Effective Lagrangian*
Nucl. Physics **B494** (1997) 331, with R. Flume, M. Magro, I. Sachs
and O. Schnetz

113. *On the Uniqeness of the Effective Lagrangian for $N = 2SQCD$*
Nucl. Physics **B508** (1997) 433, with M. Magro and I. Sachs

114. *On the completeness of the canonical reductions from Kac-Moody to W-algebras.*
Nucl. Phys.**B503** (1997) 688, with W. McGlinn.

115.*W-Algebras.*
Z. Naturforsch. **52a** (1997) 79

116. *Conformally Invariant Path Integral Formulation of the
Wess-Zumino-Witten $\rightarrow$ Liouville Reduction*
Nucl. Phys. **B 520** (1998) 513, with V.V. Sreedhar

117. *Path-Integral Formulation of the Conformal Wess-Zumino-Witten$\rightarrow$
Liouville Reduction*
Phys. Letters **B425** (1998) 291, with V. V. Sreedhar

118. *Path-Integral Formulation of the Conformal Wess-Zumino-Witten$\rightarrow$
Toda Reductions*
Phys. Letters **B529** (1998) 547, with V. V. Sreedhar

119. *Group Theory of Seiberg-Witten Model*
Physics of Atomic Nuclei **61** (1998) 1696

120. *Duality in Liouville Theory as a Reduced Symmetry*
Phys. Letters **B461** (1999) 66, with V.V. Sreedhar

121. *Duality in Quantum Liouville Theory*
Ann. Phys. **277** (1999) 117, with J.M. Pawlowski and V. V. Sreedhar

122. *Review of Seiberg-Witten Model*
Intern. J. Mod. Phys. **B13** (1999) 2987-3007

123. *The Two-Exponential Liouville Theory and the Uniqueness of the
Three-Point Function*
Phys. Lett. **B481** (2000) 436, with V.V. Sreedhar and J. Pawlowski

124. *Phases and Residual Gauge Symmetries of Higgs Models*
Ann. Phys. **285** (2000) 25, with F. Lenz, J. Negele and M. Thies

125. *Noether Currents for N=2 SUSY QCD*
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126. *On the duality of Quantum Liouville Field Theory*
Intern. J. Mod. Phys. B. **14** (2000) 2401, with J.M.
Pawlowski and V.V. Sreedhar.

127. *Supersymmetric Noether currents and Seiberg-Witten theory*
Ann. Phys. **290** (2001) 156-183, with A. Iorio and S. Wolf.

128. *The maximal kinematical invariance group of fluid dynamics and explosion-implosion duality*
Ann. Phys. **293** (2001) 215-227, with V.V. Sreedhar.

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Construction of the Invariants of the Simple Lie Groups
    Proc. (Madras 1964) 2nd.Symposium on Theoretical Physics
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* On the Interpretation of $\tilde{U}$ Symmetries
    Proc. (Athens, Ohio 1967) 2nd Conf. on Resonant Particles

Corollary to Mass-Splitting Theorem
    Proc. (Wisconsin-Milwaukee 1966) Conference on Non-Compact Groups in
    Particle Physics
    ed. Y. Chow, Benjamin (1966) 79

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