List of Publications Peter Goddard

- 1. Anomalous Threshold Singularities in S-Matrix Theory Il Nuovo Cimento **59A**, 335–355 (1969).
- Nonphysical Region Singularities of the S-Matrix Journal of Mathematical Physics 11, 960–974 (1970).
- 3. with A.R. White

TCP Signature and Non-Compact Covariance Conditions in Crossed Partial Wave Analysis: The Three Reggeon Vertex

Nuclear Physics **B17**, 45–87 (1970).

4. with A.R. White

The Three Reggeon Vertex: Analyticity, Asymptotics and the Toller Pole Model Nuclear Physics **B17**, 88–116 (1970).

5. with A.R. White

Complex Helicity and the Sommerfeld-Watson Transform of Group Theoretic Expansions Il Nuovo Cimento **1A**, 645–679 (1971).

6. with A.R. White

Landau Singularities in Multi-Regge Theory and Fixed Angle Behaviour Il Nuovo Cimento **3A**, 25–44 (1971).

7. with P.H. Frampton and D.A. Wray

Perturbative Unitarity of Dual Loops

Il Nuovo Cimento **3A**, 755–762 (1971).

- 8. Analytic Renormalisation of Dual One Loop Amplitudes Il Nuovo Cimento **4A**, 349–362 (1971).
- 9. with R.C. Brower

Generalised Virasoro Models

Lettere al Nuovo Cimento 1, 1075–1081 (1971).

10. with R.E. Waltz

One Loop Amplitudes in the Model of Neveu and Schwarz Nuclear Physics **B34**, 99–108 (1971).

11. with R.C. Brower

Collinear Algebra for the Dual Model

Nuclear Physics **B40**, 437–444 (1972).

### 12. with R.C. Brower

Physical States in the Dual Resonance Model

Proceedings of the International School of Physics "Enrico Fermi" Course LIV (Academic Press, New York and London, 1973) 98–110.

### 13. with A.R. White

The Zero in the Three Pomeron Vertex

Physics Letters **38B**, 93–98 (1972).

## 14. with C.B. Thorn

Compatibility of the Dual Pomeron with Unitarity and the Absence of Ghosts in the Dual Resonance Model

Physics Letters **40B**, 235–238 (1972).

#### 15. with C. Rebbi and C.B. Thorn

Lorentz Covariance and the Physical States in the Dual Resonance Model Il Nuovo Cimento **12A**, 425–441 (1972).

## 16. with J. Goldstone, C. Rebbi and C.B. Thorn

Quantum Dynamics of a Massless Relativistic String Nuclear Physics **B56**, 109–135 (1973).

### 17. with E.F. Corrigan

Gauge Conditions in the Dual Fermion Model Il Nuovo Cimento **18A**, 339–359 (1973).

# 18. with E.F. Corrigan

The Off-Mass Shell Physical State Projection Operator in the Dual Resonance Model Physics Letters **44B**, 502–506 (1973).

# 19. with E.F. Corrigan, D.I. Olive and R.A. Smith

Evaluation of the Scattering Amplitude for Four Dual Fermions Nuclear Physics **B67**, 477–491 (1973).

### 20. Dual Resonance Models

Supplement au Journal de Physique, Tome 34, Fasc. 11-12, Cl 160-166 (1973).

# 21. with E.F. Corrigan

Absence of Ghosts in the Dual Fermion Model Nuclear Physics **B68**, 189–202 (1974).

22. The Connection between Supersymmetry and Ordinary Lie Symmetry Groups Nuclear Physics **B88**, 429–441 (1975).

23. with A.J. Hanson and G. Ponzano

The Quantization of a Massless Relativistic String in a Time-like Gauge Nuclear Physics **B89**, 76–92 (1975).

24. with R. Horsley

The Group Theoretic Structure of Dual Vertices Nuclear Physics **B111**, 272–296 (1976).

25. The Dynamics of A Twistable Relativistic String Nuclear Physics **B116**, 157–167 (1976).

26. with J. Nuyts and D.I. Olive

Gauge Theories and Magnetic Charge Nuclear Physics **B125**, 1–28 (1977).

27. Magnetic Monopoles and Related Objects

In: Topics in Quantum Field Theory Gauge Theories (ed. J.A. de Azcarraga): Proceedings of the VIIIth GIFT International Seminar on Theoretical Physics, Salamanca, 1977 (Springer-Verlag, Berlin, 1978) 1–38.

28. with E.F. Corrigan, D.B. Fairlie and R.G. Yates

Bäcklund Transformations and the Construction of the Atiyah-Ward Ansätze for Self-Dual SU(2) Gauge Fields

Physics Letters **72B**, 354–356 (1978).

29. with E.F. Corrigan, D.B. Fairlie and R.G. Yates

The Construction of Self-Dual Solutions to SU(2) Gauge Theory Communications in Mathematical Physics **58**, 223–240 (1978).

30. with D.I. Olive

Magnetic Monopoles in Gauge Field Theories

Reports on Progress in Physics 41, 1357–1437 (1978).

31. with E.F. Corrigan, D.B. Fairlie and S. Templeton

A Green Function for the General Self-Dual Gauge Field Nuclear Physics **B140**, 31–44 (1978).

32. with E.F. Corrigan and S. Templeton

Instanton Green Functions and Tensor Products Nuclear Physics **B151**, 93–117 (1979).

33. with E.F. Corrigan, H. Osborn and S. Templeton

Zeta Function Regularisation and Multi-Instanton Determinants Nuclear Physics **B159**, 469–496 (1979).

### 34. with E.F. Corrigan

Some Aspects of Instantons

In: Geometrical and Topological Methods in Gauge Theories (ed. J.P. Harnad and S. Snider): Proceedings of the Canadian Mathematical Society Research Institute, Montreal, 1979 (Springer-Verlag, Berlin, 1980) 14–44.

### 35. with E.F.Corrigan

Instantons

In: Proceedings of Eighth Winter School on Abstract Analysis (Mathematical Institute of Czechoslovak Academy of Sciences, Prague, 1980), 44–56.

## 36. with P. Mansfield and H. Osborn

The Functional Measure for the Exact Two Instanton Solution Physics Letters **98B**, 59–62 (1981).

## 37. with D.I. Olive

Charge Quantization in Theories with an Adjoint Representation Higgs Mechanism. Nuclear Physics **B191**, 511–527 (1981).

# 38. with E.F. Corrigan

An *n* Monopole Solution with 4n-1 Degrees of Freedom Communications in Mathematical Physics **80**, 575–587 (1981).

## 39. with D.I. Olive

The Magnetic Charges of Stable Self-Dual Monopoles Nuclear Physics **B191**, 528–548 (1981).

### 40. Magnetic Monopoles in Grand Unified Theories

Philosophical Transactions of the Royal Society, A304, 87–95 (1982).

### 41. with N. Ganoulis and D.I. Olive

Self-Dual Monopoles and Toda Molecules

Nuclear Physics **B205** [FS5], 601–636 (1982).

### 42. as editor, with N. Craigie and W. Nahm

Monopoles in Quantum Field Theory: Proceedings of the Monopole Meeting, I.C.T.P., Trieste, Italy, 11–15 December 1981.

(World Scientific, Singapore, 1982) pp.461.

## 43. with M.C. Bowman, E.F. Corrigan, A. Puaca and A. Soper

The Construction of Spherically Symmetric Monopoles using the ADHMN Formalism Physical Review **D28**, 3100–3115 (1983).

### 44. with E.F. Corrigan

Construction of Instanton and Monopole Solutions and Reciprocity Annals of Physics, **154**, 253–279 (1984). 45. Topological Excitations in Field Theory

In: Statistical and Partical Physics: Common Problems and Techniques (ed. K.C. Bowler and A.J. McKane): Proceedings of the 26th Scottish Universities Summer School in Physics 1983, 189–245.

46. with D.I. Olive

Algebras, Lattices and Strings

In: Vertex Operators in Mathematics and Physics: Proceedings of a Conference November 10–17, 1983 (ed. J. Lepowsky, S. Mandelstam and I. Singer) Publications of the Mathematical Sciences Research Institute, Berkeley, No. 3 (Springer-Verlag, 1984) 51–96.

47. with E.F. Corrigan and A. Kent

Some Comments on the ADHM Construction in 4k Dimensions Communication in Mathematical Physics **100**, 1–15 (1985).

48. with D.I. Olive

Kac-Moody Algebras, Conformal Symmetry and Critical Exponents Nuclear Physics **B257** [FS14], 226–252 (1985).

49. with A. Kent and D.I. Olive

Virasoro Algebras and Coset Space Models Physics Letters **152B**, 88–92 (1985).

50. with P.R.W. Mansfield

Topological Structures in Field Theories Reports on Progress in Physics 49, 725–781 (1986).

51. Infinite Dimensional Algebras: Representations and Applications

In: Proceedings of the 13th Winter School on Abstract Analysis, Srni, 1985, Supplemento di Rendiconti del Circolo Matematico di Palermo (Serie II) 9, 73–107 (1985).

52. with D.I. Olive and A. Schwimmer

The Heterotic String and a Fermionic Construction of the  $E_8$  Kac-Moody Algebra Physics Letters **157B**, 393–399 (1985).

53. with W. Nahm and D.I. Olive

Symmetric Spaces and Sugawara's Energy Momentum Tensor in Two Dimensions Physics Letters **160B**, 111–116 (1985).

54. Magnetic Monopoles

In: Tributes to Paul Dirac (ed. J.G. Taylor) (Adam Hilger, 1987) 104-113.

55. Critical Exponents, Infinite Dimensional Lie Algebras and Symmetric Spaces

In: New Trends in Particle Theory (ed. L. Lusanna), Proceedings of the Ninth John Hopkins Workshop on Current Problems in High Energy Particle Theory (World Scientific, Singapore, 1986) 51–80.

## 56. Vertex Operators and Algebras

In: Superstrings, Supergravity and Unified Theories (ed. G. Furlan et al.) Proceedings of the Summer Workshop on High Energy Physics and Cosmology, International Centre for Theoretical Physics, Trieste 1985 (World Scientific, Singapore, 1986) 255–291.

#### 57. with A. Kent and D. Olive

Unitary Representations of the Virasoro and Super-Virasoro Algebras Communications in Mathematical Physics **103**, 105–119 (1986).

#### 58. with D. Olive

An Introduction to Kac-Moody Algebras and their Physical Applications

In: Unified String Theory Workshop (ed. M.B. Green and D.J. Gross), Santa Barbara 1985 (World Scientific, Singapore, 1986) 214–243.

## 59. Algebras, Lattices and Vertex Operators

In: First Torino Meeting on Superunification and Extra Dimensions (ed. R. D'Auria and P. Fre), Torino 1985 (World Scientific, Singapore, 1986) 275–288.

#### 60. with D. Olive

Kac-Moody Algebras in Relation to Quantum Physics International Journal of Modern Physics A1, 303–414 (1986).

## 61. with W. Nahm, D. Olive and A. Schwimmer

Vertex Operators for Non-Simply-Laced Algebras

Communications in Mathematical Physics 107, 179–212 (1986).

### 62. The Vertex Operator Construction for Non-Simply-Laced Kac-Moody Algebras II

In: Topological and Geometrical Methods in Field Theory (ed. J. Hietarinta and J. Westerholm) Proceedings of the Espoo Symposium (World Scientific, Singapore, 1986) 37–57; and in: Infinite-Dimensional Lie Algebras and their Applications (ed. S.N. Kass) Montreal, 1986 (World Scientific, Singapore, 1988) 45–61.

### 63. Representations of Kac-Moody and Virasoro Algebras

In: Superfield Theories (ed. H.C. Lee et al.) Proceedings of the Nato Workshop on Superfield Theory, Vancouver 1986 (Plenum, New York, 1987) 233–263.

### 64. Kac-Moody and Virasoro Algebras in Mathematical Physics

In: Proceedings of the Eighth International Congress on Mathematical Physics (ed. M. Mebkhout and R. Seneor) Marseille 1986 (World Scientific, Singapore, 1987) 390–401.

### 65. with P. Bowcock

Virasoro Algebras with Central Charge c < 1Nuclear Physics **B285** [FS19], 651–670 (1987).

## 66. with R. Bluhm and L. Dolan

A New Method of Incorporating Symmetry into Superstring Theory Nuclear Physics **B289**, 364–384 (1987). 67. with W. Nahm, D. Olive, H. Ruegg and A. Schwimmer

Fermions and Octonions

Communications in Mathematical Physics 112, 385–408 (1987).

68. with D. Olive and G. Waterson

Superalgebras, Symplectic Bosons and the Sugawara Construction Communications in Mathematical Physics 112, 591–611 (1987).

69. Symmetry and Algebras in String Theory

In: Superstrings '87 (ed. L. Alvarez-Gaumé et al.) Proceedings of the 1987 ICTP Spring School on Superstrings, Trieste 1987 (World Scientific, Singapore, 1987) 157–189.

70. Modular Invariance and Infinite-dimensional Algebras

In: Superstrings (ed. P.G.O. Freund and K.T. Mahanthappa) Proceedings of the NATO Workshop on Superstrings, Boulder 1987 (Plenum, New York, 1988) 3–16.

71. as editor, with D. Olive

Kac-Moody and Virasoro Algebras: a reprint volume for physicists (World Scientific, Singapore, 1988) 599 pp.

72. Affine Superalgebras and the Super-Sugawara Construction

In: Perspectives in String Theory (ed. P. Di Vecchia and J.L. Petersen) Proceedings of the Niels Bohr Institute/Nordita Meeting, Copenhagen 1987 (World Scientific, Singapore, 1988) 300–314.

73. with A. Schwimmer

Unitary Construction of Extended Conformal Algebras Physics Letters **206B**, 62–70 (1988).

74. with R. Bluhm and L. Dolan

Unitarity and Modular Invariance as Constraints on Four-dimensional String Theory Nuclear Physics **B309**, 330–360 (1988).

75. with P. Bowcock

Coset Constructions and Extended Conformal Algebras

Nuclear Physics **B305** [FS23], 685–709 (1988).

76. Meromorphic Conformal Field Theory

In: Infinite Dimensional Lie Algebras and Lie Groups (ed. V.G. Kac) Proceedings of the CIRM – Luminy Conference, 1988 (World Scientific, Singapore, 1989) 556–587.

77. with A. Schwimmer

Factoring Out Free Fermions and Superconformal Algebras

Physics Letters, **214B**, 209–214 (1988).

78. Conformal Symmetry and its Extensions

In: Proceedings of the Ninth International Congress on Mathematical Physics (ed. B. Simon, A. Truman and I.M. Davies) Swansea 1988 (Adam Hilger, Bristol, 1989) 1–21.

79. Extended Conformal Algebras

In: The Interface of Mathematics and Particle Physics (ed. D.G. Quillen et al.) Proceedings of the 1988 Oxford Conference (Oxford University Press, 1990) 77–86.

80. Gauge Symmetry in String Theory

Philosophical Transactions of the Royal Society A329, 329–342 (1989).

81. String Theory

SERC Annual Report 1988-89, 73-76.

82. with L. Dolan and P. Montague

Conformal Field Theory of Twisted Vertex Operators Nuclear Physics **B338**, 529–601 (1990).

83. with L. Dolan and P. Montague

Conformal Field Theory, Triality and the Monster Group Physics Letters **236B**, 165–172 (1990).

84. with L. Dolan and P. Montague

Twisted Conformal Field Theory

In: Proceedings of the Trieste Conference on "Recent Developments in Conformal Field Theories" (ed. S. Randjbar-Daemi, E. Sezgin and J.-B. Zuber) (World Scientific, Singapore, 1990) 39–54.

85. with M. Chu, I. Halliday, D. Olive and A. Schwimmer

Quantization of the Wess-Zumino-Witten Model on a Circle

Physics Letters **266B**, 71–81 (1991).

86. with M. Chu

Field Theory Construction of Chiral SU(N) WZW Models at Level One

In: Proceedings of the XXVII International Conference on High Energy Physics, Glasgow 1994 (ed. P. J. Bussey and I. G. Knowles) (IOP Publishing, Bristol, 1995) 1255–1258.

87. with M. Chu

Quantization of a Particle Moving on a Group Manifold Physics Letters **337B**, 285–293 (1994). [hep-th/9407116]

88. with M. Chu

Quantization of the SU(N) WZW Model at level k

Nuclear Physics **B445**, 145–168 (1995). [hep-th/9407108]

## 89. with L. Dolan and P. Montague

Conformal Field Theories, Representations and Lattice Constructions

Communications in Mathematical Physics. 179, 61–120 (1996). [hep-th/9410029]

#### 90. as editor

Paul Dirac, The Man and his Work (Cambridge University Press, Cambridge, 1998) 139 pp.

#### 91. The Work of R.E. Borcherds

In Proceedings of the International Congress of Mathematicians, Berlin 1998. (Deutscher Mathematiker-Vereinigung, 1998) 99–108 [math/9808136]

## 92. with M.R. Gaberdiel

Axiomatic Conformal Field Theory

Communications in Mathematical Physics 209, 549–594 (2000). [hep-th/9810019]

#### 93. with M.R. Gaberdiel

An Introduction to Meromorphic Conformal Field Theory and its Representations,

In: Conformal Field Theory: New Non-Perturbative Methods in String and Field Theory (Proceedings of the Research Semester on Conformal Field Theory, Matrix models and dualities, Istanbul 1998; ed. Y. Nutku et al. (Perseus, Reading MA, 2000) 1–56.

### 94. with L. Dolan

Tree and Loop Amplitudes in Open Twistor String Theory

Journal of High Energy Physics **0706**:005, 1–39 (2007). [hep-th/0703054]

### 95. with L. Dolan

Current Algebra on the Torus

Communications in Mathematical Physics 285, 219-264 (2009). [arXiv:0710.3743]

## 96. From Dual Models to String Theory

In: The Birth of String Theory (ed. A. Cappelli et al.) (Cambridge University Press, Cambridge, 2012) 236–261. [arXiv:0802.3249]

### 97. with L. Dolan

Gluon Tree Amplitudes in Open Twistor String Theory

Journal of High Energy Physics **0912**:003, 1–31 (2009). [arXiv:0909.0499]

## 98. with L. Dolan

General Split Helicity Gluon Tree Amplitudes in Open Twistor String Theory Journal of High Energy Physics 1005:044 (2010). [arXiv:1002.4852]

## 99. Algebras, Groups and Strings

Erwin Schrödinger Institute booklet (Vienna, 2013) 12–15.

## 100. with L. Dolan

Complete Equivalence Between Gluon Tree Amplitudes in Twistor String Theory and in Gauge Theory

Journal of High Energy Physics **1206**:030 (2012). [arXiv:1111.0950]

## 101. with L. Dolan

Proof of the Formula of Cachazo, He and Yuan for Yang-Mills Tree Amplitudes in Arbitrary Dimension

Journal of High Energy Physics **05**:010 (2014). [arXiv:1311.5200]

## 102. with L. Dolan

The Polynomial Form of the Scattering Equations

Journal of High Energy Physics 07:029 (2014). [arXiv:1402.7374]

### 103. with L. Dolan

General Solution of the Scattering Equations

Journal of High Energy Physics 10:149 (2016). [arXiv:1511.09441]

104. The Guiding Influence of Stanley Mandelstam, from S-Matrix Theory to String Theory
In: Memorial Volume for Stanley Mandelstam, (N. Berkovits et al.) (World Scientific, Singapore, 2017). [arXiv:1702.05986]