

Publication List — T.W.B. Kibble

Research papers in refereed journals (only published papers are numbered)

1. On Schwinger's variational principle [T.K. & J.C. Polkinghorne]
Proc. Roy. Soc. **A242**, 252–63 (1957)
2. Dispersion relations for inelastic scattering
Proc. Roy. Soc. **A244**, 355–76 (1958)
3. Higher-order spinor Lagrangians [T.K. & J.C. Polkinghorne]
Il Nuovo Cimento, ser. X, **8**, 74–83 (1958)
4. On the consistency of Schwinger's action principle
Il Nuovo Cimento, ser. X, **10**, 417–27 (1958)
5. The commutation relations obtained from Schwinger's action principle
Proc. Roy. Soc. **A249**, 441–4 (1959)
6. Jost functions and dispersion relations [J.J. Giambiagi & T.K.]
Annals of Physics (N.Y.) **7**, 39–51 (1959)
7. Kinematics of general scattering processes and the Mandelstam representation
Phys. Rev. **117**, 1159–61 (1960)
8. Lorentz invariance and the gravitational field
J. Math. Phys. **2**, 212–21 (1961)
9. Feynman rules for Regge particles
Phys. Rev. **131**, 2282–91 (1963)
10. Canonical variables for the interacting gravitational and Dirac fields
J. Math. Phys. **4**, 1433–37 (1963)
11. Interaction of intense laser beams with electrons [L.S. Brown & T.K.]
Phys. Rev. **133**, A705–19 (1964)
12. Global conservation laws and massless particles [G.S. Guralnik, C.R. Hagen & T.K.]
Phys. Rev. Letters **13**, 585–7 (1964)
13. Frequency shift in high-intensity Compton scattering
Phys. Rev. **138**, B740–53 (1965)
14. Conservation laws for free fields
J. Math. Phys. **6**, 1022–6 (1965)
15. Lagrangian formalism of $\tilde{U}(12)$ symmetry and the Bargmann-Wigner equations [G.S. Guralnik & T.K.]
Phys. Rev. **139**, B712–19 (1965)
16. Relativistic transformation laws for thermodynamic variables
Il Nuovo Cimento, ser. X, **41B**, 72–8 (1966)
17. Comment on the remarks of Gamba
Il Nuovo Cimento, ser. X, **41B**, 83 (1966)
18. Remarks on the comments of Dr Arzeliès
Il Nuovo Cimento, ser. X, **41B**, 84–5 (1966)
19. Relativistic corrections to Thomson scattering from laser beams
Physics Letters **20**, 627–8 (1966)
20. Refraction of electrons by intense electromagnetic waves
Phys. Rev. Letters **16**, 1054–6 (1966)
21. Mutual refraction of electrons and photons
Phys. Rev. **150**, 1060–69 (1966)
22. Symmetry-breaking in non-Abelian gauge theories
Phys. Rev. **155**, 1554–61 (1967)
23. Coherent soft-photon states and infrared divergences. I. Classical currents
J. Math. Phys. **9**, 315–24 (1968)

24. Coherent soft-photon states and infrared divergences. II. Mass-shell singularities of Green's functions
Phys. Rev. **173**, 1527–35 (1968)
25. Coherent soft-photon states and infrared divergences. III. Asymptotic states and reduction formulas
Phys. Rev. **174**, 1882–1901 (1968)
26. Coherent soft-photon states and infrared divergences. IV. The scattering operator
Phys. Rev. **175**, 1624–40 (1968)
- . Theory of measurements in finite space-time regions
unpublished (1970)
- . Are there superselection rules?
unpublished (1972)
27. Intensity-dependent mass shift and symmetry breaking [T.K., A. Salam & J. Strathdee]
Nuc. Phys. **B96**, 255–63 (1975)
28. Topology of cosmic domains and strings
J. Phys. A: Math. & Gen. **9**, 1387–98 (1976)
29. Relativistic models of non-linear quantum mechanics
Commun. math. Phys. **64**, 73–82 (1978)
30. Geometrization of quantum mechanics
Commun. math. Phys. **65**, 189–201 (1979)
31. Non-linear coupling of quantum theory and classical gravity [T.K. & S. Randjbar-Daemi]
J. Phys. A: Math. & Gen. **13**, 141–8 (1980)
32. Renormalization of semi-classical theories [S. Randjbar-Daemi, B.S. Kay & T.K.]
Physics Letters **91B**, 417–20 (1980), Imperial/TP/79-80/12
33. Strings in SO(10) [T.K., G. Lazarides & Q. Shafi]
Physics Letters **113B**, 237–9 (1982), Imperial/TP/81-82/18
34. Walls bounded by strings [T.K., G. Lazarides & Q. Shafi]
Phys. Rev. D **26**, 435–9 (1982)
35. Self-intersection of cosmic strings [T.K. & N. Turok]
Physics Letters **116B**, 141–3 (1982), Imperial/TP/81-82/27
36. Baryon number from collapsing cosmic strings [P. Bhattacharjee, T.K. & N. Turok]
Physics Letters **119B**, 95–6 (1982), Imperial/TP/81-82/31
37. Monopoles on strings [M. Hindmarsh & T.K.]
Phys. Rev. Letters **55**, 2398–2400 (1985), Imperial/TP/85-86/01
38. Hindmarsh and Kibble respond [M. Hindmarsh & T.K.]
Phys. Rev. Letters **57**, 647 [1986]
39. Configuration of Z_2 strings
Physics Letters **B166**, 311–13 (1986), Imperial/TP/84-85/39
40. String-dominated universe
Phys. Rev. D **33**, 328–32 (1986), Imperial/TP/84-85/30
41. Monopoles connected by strings and the monopole problem [E. Copeland, D. Haws, T.K., D. Mitchell & N. Turok]
Nuc. Phys. **B298**, 445–7 (1988), Imperial/TP/86-87/24
42. When does causality constrain the monopole abundance? [T.K. & E. Weinberg]
Phys. Rev. D **43**, 3188–90 (1991), Imperial/TP/89-90/33
43. Scaling solutions in cosmic string networks [E. Copeland, T.K. & D. Austin]
Phys. Rev. D **45**, R1000–04 (1992), Imperial/TP/90-91/19
44. How efficient is the Langacker-Pi mechanism of monopole annihilation? [R. Holman, T.K. & S.-J. Rey]
Phys. Rev. Letters **69**, 241–4 (1992), Imperial/TP/91-92/18, hep-ph/9203209
45. Evolution of cosmic string configurations [D. Austin, E. Copeland & T.K.]

- Phys. Rev. D* **48**, 5594–5627 (1993), Imperial/TP/92-93/42, hep-ph/9307325
46. Cosmic rays from cosmic strings [A. Gill & T.K.]
Phys. Rev. D **50**, 3660–65 (1994), Imperial/TP/93-94/23, hep-ph/9403395
47. Non-intercommuting configurations in the collisions of type I U(1) cosmic strings [L.M.A. Bettencourt & T.K.]
Physics Letters **B332**, 297–304 (1994), Imperial/TP/93-94/34, hep-ph/9405221
48. High-harmonic configurations of cosmic strings: an analysis of self-intersections [X.A. Siemens & T.K.]
Nuclear Physics **B438**, 307–319 (1995), Imperial/TP/94-95/01, hep-ph/9412216
49. Characteristics of cosmic-string scaling configurations [D. Austin, E.J. Copeland & T.K.]
Phys. Rev. D **51**, R2499–2503 (1995), Imperial/TP/93-94/45, hep-ph/9406379
50. Density of strings formed at a second-order cosmological phase transition [T.K. & A. Vilenkin]
Imperial/TP/94-95/09A, hep-ph/9501207, submitted to *Phys. Rev. Letters* (withdrawn)
51. Phase equilibration in bubble collisions [T.K. & A. Vilenkin]
Phys. Rev. D **52**, 679–688 (1995), Imperial/TP/94-95/11, hep-ph/9501266
52. Defect production in slow first-order phase transitions [J. Borrill, T.K., T. Vachaspati & A. Vilenkin]
Phys. Rev. D **52**, 1934–43 (1995), Imperial/TP/94-95/18, hep-ph/9503223
53. An extension to models for cosmic string formation [A. Yates & T.K.]
Physics Letters **B364**, 149–156 (1995), Imperial/TP/94-95/14, hep-ph/9508383
54. Vortex formation in neutron-irradiated superfluid $^3\text{He-B}$ as an analogue of cosmological defect formation [V.M.H. Ruutu, V.B. Eltsov, A.J. Gill, T.K., M. Krusius, Yu.G. Makhlin, B. Plaças, G.E. Volovik & Wen Xu]
Nature **382**, 334–6 (1996), Imperial/TP/95-96/17, cond-mat/9512117
55. Quench induced vortices in the symmetry broken phase of liquid ^4He [A.J. Gill & T.K.]
J. Phys. A: Math. & Gen. **29**, 4289–4305 (1996)
56. On phase ordering behind the propagating front of a second-order transition [T.K. & G.E. Volovik]
Pis'ma Zh. Eksp. Teor. Fiz. **65**, 96–101 (1996) [*JETP Letters* **65**, 102–7 (1997)]
57. Non-Abelian string conductivity [T.K., G. Lozano & A. Yates]
Phys. Rev. D **56**, 1204–14 (1997), Imperial/TP/96-97/14, hep-ph/9701240
58. Wick's theorem for non-symmetric normal ordered products and contractions [T.S. Evans, T.K. & D.A. Steer]
J. Math. Phys. **39**, 5726–38 (1998), Imperial/TP/97-98/16, hep-ph/9801404
- . Gamma-ray burst as vacuum discharge of super-Schwinger electric fields [R. Lieu, Y. Takahashi, & T.K.],
unpublished (1998), astro-ph/9803072
59. The evolution of a network of cosmic string loops [E.J. Copeland, T.K. & D.A. Steer]
Phys. Rev. D **58**, 043508 (1998) (14 pp), Imperial/TP/97-98/31, hep-ph/9803414
- . Surface quantum effects in a fireball model of gamma ray bursts [R. Lieu, Y. Takahashi, T.K., J. van Paradijs & A.G. Emslie]
astro-ph/9902088 (revised version of astro-ph/9803072), unpublished
60. Classifying vortex solutions to gauge theories [T.K. & N.F. Lepora]
Phys. Rev. D **59**, 125019 (1999) (10 pp), Imperial/TP/97-98/48, hep-th/9904177
61. Electroweak vacuum geometry [N.F. Lepora & T.K.]
J.H.E.P. **9904**, 027 (1999) (19 pp), Imperial/TP/98-99/26, hep-th/9904178
62. Dynamics and properties of chiral cosmic strings in Minkowski space [A.C. Davis, T.K., M. Pickles & D.A. Steer]
Phys. Rev. D **62**, 083516 (2000) (8 pp), Imperial/TP/99-0/27, astro-ph/0005514
63. Composite defect extends analogy between cosmology and ^3He [V.B. Eltsov, T.K., M. Krusius, V.M.H. Ruutu & G.E. Volovik]
Phys. Rev. Letters **85**, 4739 (2000), Imperial/TP/99-0/42, cond-mat/0007369

64. Topological defects in lattice gauge theories [A.C. Davis, T.K., A. Rajantie & H. Shanahan]
J.H.E.P. **11**, 010 (2000) (23 pp), Imperial/TP/99-0/43, hep-lat/0009037
65. Nielsen--Olesen vortex in varying-alpha theories [J. Magueijo, H. Sandvik & T.K.]
Phys. Rev. D **64**, 023521 (2001) (7 pp), Imperial/TP/00-01/07, hep-ph/0101155
66. Monopole mass in the three-dimensional Georgi--Glashow model [A.C. Davis, A. Hart, TK & A. Rajantie]
Phys. Rev. D **65**, 125008 (2002) (12 pp), Imperial/TP/01-02/001, hep-lat/0110154
67. Estimation of vortex density after superconducting film quench [T.K. & A. Rajantie]
Phys. Rev. B **68**, 174512 (2003) (6 pp), Imperial/TP/02-03/026, cond-mat/0306633
68. Spontaneous vortex formation on a superconductor film [M.A. Donaire, T.K. & A. Rajantie]
New J. Phys. **9**, 148 (2007) (9 pp) (also in *IoP Select*), Imperial/TP/040905, cond-mat/0409172
69. Average magnification effect of clumping of matter [T.K. & R. Lieu]
Astrophys. J. **632**, 718--726 (2005), Imperial/TP/041203, astro-ph/0412275
70. Collisions of strings with Y junctions [E.J. Copeland, T.K. & D.A. Steer]
Phys. Rev. Letters **97**, 021602 (2006) (4 pp), Imperial/TP/06/TK/01, hep-th/0601153
71. Constraints on string networks with junctions [E.J. Copeland, T.K. & D.A. Steer]
Phys. Rev. D **75**, 065024 (2007), Imperial/TP/06/TK/02, hep-th/0611243
72. Kinematic constraints on the formation of bound states of cosmic strings — field-theoretical approach [P. Salmi, A. Achúcarro, E.J. Copeland, T.K., R. de Putter & D.A. Steer]
Phys. Rev. D **77**, 041701 (2008), Imperial/TP/07/TK/01, arXiv:0712.1204 [hep-th]
73. Collision of cosmic superstrings [E.J. Copeland, H. Firouzjahi, T.K. & D.A. Steer]
Phys. Rev. D **77**, 063521 (2008), Imperial/TP/07/TK/02, arXiv:0712.0808 [hep-th]
74. Formation of non-abelian monopoles connected by strings [Yifung Ng, T.K. & T. Vachaspati]
Phys. Rev. D **78**, 046001 (2008), Imperial/TP/08/TK/02, arXiv:0806.0155 [hep-th]
- . A natural origin of primordial density perturbations [R. Lieu & T.K.]
unpublished (2009), Imperial/TP/09/TK/01, arXiv:0904.4840 [astro-ph]
75. Kinks and small-scale structure on cosmic strings [E.J. Copeland & T.K.]
Phys. Rev. D **80**, 123523, Imperial/TP/09/TK/02, arXiv:0909.1960 [astro-ph],
doi: 10.1103/PhysRevD.80.123523

Conference reports

- C1. The quantum theory of gravitation
High energy physics and elementary particles (Vienna: IAEA, 1965), pp. 885–910 [lectures at the International Centre for Theoretical Physics, Trieste, May–June 1965]
- C2. The Goldstone theorem
Proceedings of the 1967 International Conference on Particles and Fields, Rochester, New York, Aug. 1967, ed. C.R. Hagen, G.S. Guralnik & V.S. Mathur (New York: Interscience, 1967), pp. 277–304
- C3. Quantum electrodynamics and other fields
Inaugural lectures (London: Imperial College, 1971)
- C4. Relativistic non-linear quantum mechanics
Proceedings of the 19th International Conference on High-Energy Physics, Tokyo, Aug. 1978, ed. S. Homma, M. Kawaguchi & H. Miyazawa (Tokyo: Physical Society of Japan, 1979), pp. 527–9
- C5. Some implications of a cosmological phase transition
Physics Reports **67C**, 183–99 (1980) [*Common Trends in Particle Physics and Condensed Matter Physics*, Proceedings of the *Les Houches Winter Advanced Study Institute*, Feb. 1980], Imperial/TP/79-80/23
- C5. Is a semi-classical theory of gravity viable?
Quantum Gravity 2: A Second Oxford Symposium, ed. C.J. Isham, R. Penrose & D.W. Sciama (Oxford: Clarendon Press, 1981), pp. 63–80
- C6. Phase transitions in the early universe
Quantum structure of space and time, ed. M.J. Duff & C.J. Isham (Cambridge: Cambridge University Press, 1982), pp. 391–408 [Proceedings of the *Nuffield Workshop*, Imperial College, Aug. 1981]
- C7. Monopoles in the present and early universe
Monopoles in quantum field theory, ed. N.S. Craigie, P. Goddard & W. Nahm (Singapore: World Scientific, 1982), pp. 341–76 [Proceedings of the *Monopole Meeting*, Trieste, Dec. 1981], Imperial/TP/81-82/14
- C8. Phase transitions in the early universe and their consequences
Phil. Trans. Roy. Soc. **A310**, 293–302 (1983) [Lecture at Royal Society Discussion Meeting on *The Constants of Physics*, May 1983]
- C9. Evolution of a system of cosmic strings
Nuc. Phys. **B252**, 227–44 (1985) [*Phase transitions in the very early universe*, Proceedings of the International Workshop, Bielefeld, June 1984]; *erratum*, *Nuc. Phys.* **B261**, 750 (1985), Imperial/TP/83-84/54
- C10. Cosmic strings and galaxy formation
Particles and the universe, ed. G. Lazarides & Q. Shafi (North-Holland, 1986), pp. 177–88 [Lecture at the *International Symposium on Particles and the Universe*, Aristotle University of Thessaloniki, June 1985], Imperial/TP/84-85/36
- C11. Cosmic strings and galaxy formation [T.K. & N.G. Turok]
Phil. Trans. Roy. Soc. **A320**, 565–571 (1986) [Lecture at Royal Society Discussion Meeting on the *Material Content of the Universe*, October 1985], Imperial/TP/85-86/06
- C12. Gauge fields, topological defects and cosmology
Schrödinger: centenary celebration of a polymath, ed. C.W. Kilmister (Cambridge: Cambridge University Press, 1987), pp. 201–12 [Lecture presented at the *Schrödinger centenary meeting*, Imperial College, April 1987]
- C13. Cosmic strings — an overview
The formation and evolution of cosmic strings, ed. G.W. Gibbons, S.W. Hawking & T. Vachaspati (Cambridge: Cambridge University Press, 1990), pp. 3–32 [Lecture presented at the *Cosmic String Workshop*, Cambridge, July 1989]
- C14. Evolution of small-scale structure on cosmic strings [T.K. & E. Copeland]

- The birth and early evolution of our universe*, ed. J.S. Nilsson, B. Gustafsson & B.-S. Skagerstam (Singapore: World Scientific, 1991), *Physica Scripta* **T36**, 153–166 [Proceedings of *Nobel Symposium 79*, held at Gräntåvallen, June 1990], Imperial/TP/89-90/27
- C15. Genesis of unified gauge theories — personal recollections from Imperial
Salamfestschrift, ed. A. Ali, J. Ellis & S. Randjbar-Daemi (Singapore: World Scientific, 1994), pp. 592–603 [Proceedings of *Salamfest*, held in Trieste, March 1993], Imperial/TP/92-93/24
- C16. Phase transitions in the early universe
Astrophysics and cosmology: the emerging frontier, ed. B. Sinha & R.K. Moitra (New Delhi: Narosa Publishing House, 1995), pp. 1–19 [Proceedings of *International Conference on Astrophysics & Cosmology (Birth Centenary Celebration of M.N. Saha)*, Calcutta, December 1993]
- C17. Evolution of cosmic strings and cosmological implications
Second Paris Cosmology Colloquium, ed. N. Sánchez & H. de Vega (Singapore: World Scientific, 1995), pp. 1–25 [Proceedings of *Journée Cosmologie*, Paris, June 1994]
- C18. Phase transitions and topological defects in the early universe
Austral. J. Phys. **50**, 697–722 (1997) [Proceedings of 12th Australian Institute of Physics Congress, Hobart, July 1996]
- C19. Testing cosmological defect formation in the laboratory
Proceedings of Rome conference 1997
- C20. Testing cosmological defect formation in the laboratory
Invited lecture at the Second European Conference on Vortex Matter in Superconductors, Crete, 15-25 September 2001, *Physica C* **369**, 87–92 (2002), Imperial/TP/01-02/005, cond-mat/0111082.
- C21. Cosmic strings reborn?
Invited lecture at COSLAB 2004, Ambleside, 10–17 September 2004, Imperial/TP/041001, astro-ph/0410073.
- C22. Introduction. Cosmology meets condensed matter [T.K. & G.R. Pickett]
Phil. Trans. Roy. Soc. A, (2008) [Introduction to proceedings of Royal Society Discussion Meeting *Cosmology meets condensed matter*, Jan 2008]

Review articles

- R1. Broken symmetries and the Goldstone theorem [G.S. Guralnik, C.R. Hagen & T.K.]
Advances in Particle Physics **2**, ed. R.H. Cool & R.E. Marshak (New York: Interscience, 1968), pp. 567–708
- R2. Gauge theories of gravity and supergravity [T.K. & K.S. Stelle]
Progress in quantum field theory, ed. H. Ezawa & S. Kamefuchi (Amsterdam: North-Holland, 1986), pp. 57–81 [*Festschrift* for H. Umezawa]
- R3. Cosmic strings
J.J. Giambiagi Festschrift, ed. H. Falomir, R.E. Gamboa Saravi, P. Leal Ferreira & F.A. Schaposnik (Singapore: World Scientific, 1990), pp. 241-257.
- R4. Phase transitions and defects in the early universe
M.N. Saha Birth Centenary Commemoration Volume, ed. S.B. Karmohapetro (Calcutta: Saha Institute, 1993), pp. 1–21
- R5. Cosmic strings [M.B. Hindmarsh & T.K.]
Reports on Progress in Physics, **58**, 477–562 (1995), Imperial/TP/94-95/05, hep-ph/9411342
- R6. Topological defects and their homotopy classification
Encyclopedia of Mathematical Physics, eds. J.-P. Francoise, G.L. Naber & Tsou S.T. (Oxford: Elsevier, 2006 (ISBN 978-0-1251-2666-3), vol. 5, p. 257
- R7. Symmetry breaking in field theory
Encyclopedia of Mathematical Physics, eds. J.-P. Francoise, G.L. Naber & Tsou S.T. (Oxford: Elsevier, 2006 (ISBN 978-0-1251-2666-3), vol. 5, p. 198
- R8. Englert-Brout-Higgs-Guralnik-Hagen-Kibble mechanism
Scholarpedia **4**(1):6441 (2009)
- R9. Englert-Brout-Higgs-Guralnik-Hagen-Kibble mechanism (history)
Scholarpedia **4**(1):8741 (2009)
- . Cosmic strings and superstrings [E.J. Copeland & T.K.]
submitted to *Proc. Roy Soc. A*, Imperial/TP/09/TK/03, arXiv:0911.1345 [hep-th]

Textbooks

Classical mechanics

- 1st ed. (London: McGraw-Hill, 1966)
2nd ed. (London: McGraw-Hill, 1973)
3rd ed. (London: Longmans, 1985)
4th ed. [T.K. & F.H. Berkshire] (London: Addison-Wesley–Longman, 1996)
5th ed. [T.K. & F.H. Berkshire] (London: Imperial College Press, 2004)

Mecânica clássica

- (Portuguese ed.), tr. A.L. da Rocha Barros & D.M. Redondo (São Paulo: Editora Polígono, 1970)

Mécanique classique

- (French ed.), tr. M. Le Ray & F. Guérin (Paris: Ediscience, 1972)

Mecánica clásica

- (Spanish ed.), tr. A. Madroñero de la Cal (Bilbao: Ediciones Urmo, 1972)

Summer school lectures

- S1. Some applications of coherent states
Cargèse lectures in physics, vol. 2, ed. M. Lévy (New York: Gordon & Breach, 1968), pp. 239–345 [Lectures given at *Cargèse Summer Institute*, 1967]
- S2. Coherent states and infrared divergences
Lectures in theoretical physics, vol. XI–D, ed. K. Mahanthappa & W.E. Brittin (New York: Gordon & Breach, 1969), pp. 387–477 [Lectures given at the *Summer Institute for Theoretical Physics*, Boulder, Colorado, 1968]
- S3. Quantum electrodynamics
Quantum optics, ed. S.M. Kay & A. Maitland (London: Academic Press, 1970), pp. 11–52 [Lectures given at the *Scottish Universities Summer School*, 1969]
- S4. Restoration of broken symmetries
Lectures given at the *International School of Elementary Particle Physics*, Baškos Polje Makaraska, 1975, ed. M. Nikolić
- S5. Phase transitions in the early universe
Acta Physica Polonica B13, 723–46 (1982) [Lectures given at the *VI Autumn School of Theoretical Physics*, Szczyrk, 1981], Imperial/TP/81-82/19
- S6. Cosmic strings
Cosmology and Particle Physics, ed. E. Alvarez, R. Domínguez Tenreiro, J.M. Ibáñez Cabanell & M. Quirós (Singapore: World Scientific, 1987), pp. 171–208 [Lectures presented at the *GIFT XVII International Seminar on Theoretical Physics*, Peñíscola, June 1986]
- S7. Cosmic strings — current status
Current Topics in Astrofundamental Physics, ed. N. Sánchez & A. Zichichi (Singapore: World Scientific, 1992) pp. 68–91. [Lecture given at *First Daniel Challonge International School of Astrophysics*, Erice, September 1991], Imperial/TP/91-92/03
- S8. Phase transitions in the early universe and defect formation
Formation and interactions of topological defects, ed. A.C. Davis & R. Brandenburger (New York: Plenum, 1995) pp. 1–26. [Lectures at NATO Advanced Study Institute held in Cambridge, August 1994]
- S9. Early days of gauge theories — recollections from Imperial College
Lecture at the 20th Nathiagali Summer College on Physics & Contemporary Needs, Bhurban, Murree Hills, Pakistan, June 1995, to be published by World Scientific
- S10. Cosmic strings
Lecture at the 20th Nathiagali Summer College on Physics & Contemporary Needs, Bhurban, Murree Hills, Pakistan, June 1995, to be published by World Scientific
- S11. Formation of defects in the early universe — and in the laboratory
Current Topics in Astrofundamental Physics, 5th course, ed. N. Sánchez & A. Zichichi (Singapore: World Scientific, 1997) pp. 322–42. [Lecture given at *Daniel Challonge International School of Astrophysics*, Erice, September 1996]
- S12. Classification of topological defects and their relevance to cosmology and elsewhere
Topological Defects and the Non-Equilibrium Dynamics of Symmetry Breaking Phase Transitions, ed. Y.M. Bunkov & H. Godfrin, NATO Science Series C: Mathematical and Physical Sciences, **549**, pp. 7–31 (Dordrecht: Kluwer Academic Publishers, 2000) [Proceedings of NATO Advanced Study Institute, Les Houches, February 1999].
- S13. Symmetry breaking and defects
Patterns of Symmetry Breaking, ed. H. Arodz, J. Dziarmaga & W.H. Zurek, NATO Science II, **127**, pp. 3–36 [Proceedings of NATO Advanced Study Institute, Cracow, September 2002], Imperial/TP/02-3/5, cond-mat/0211110.

Popular and non-technical articles

- P1. Lasers in fundamental physics
New Scientist, no. 404, p. 372, 14 Aug 1964
- P2. Excitement in high energy physics [J.M. Charap & T.K.]
The Times Science Review, Spring 1965
- P3. Putting relativity into particle symmetries
The Times Science Review, Spring 1965
- P4. Elementary particle symmetries
Contemporary Physics **6**, 436–52 (1965)
- P5. Taxonomy of elementary particles
Lecture at *British Association* meeting, Exeter, 1969
- P6. Are there real limits to growth? — A reply to Beckerman [L.S. Brown, L. Castillejo, H.F. Jones, T.K. & M. Rowan-Robinson]
Oxford Economic Papers **25**, 455–60 (1973)
- P7. Domains and strings
Physics Bulletin, Aug. 1976, p.337
- P8. Nobel Prizes 1979: Unification
Physics Bulletin **30**, 514–15 (1979)
- P9. Science and the arms race
Fire foreloesninger om freds- og konflikt-forskning på Københavns Universitet, ed. O. Nathan (1983), pp. 51–71
- P10. Science and the arms race
A fegyverkezési verseny és a nukleáris háború, ed. M. Neményi (Budapest: Hungarian Academy of Sciences, 1984), pp. 31–41 [Proceedings of a meeting in Budapest, March 1984]
- P11. Phase transitions: Cosmology in the laboratory
Nature (News & Views) **317**, 472 (1985)
- P12. Missile defence and European security
Ways out of the arms race [*International Scientists' Peace Congress*, Hamburg, November 1986]
- P13. Paul Taunton Matthews 1919–1987
Biographical Memoirs of Fellows of the Royal Society, **34**, 555–580 (1988)
- P14. Opening remarks
Ways out of the arms race: from the nuclear threat to mutual security, ed. J. Hassard, T.K. & P. Lewis (Singapore: World Scientific, 1989), pp. 1–2 [Proceedings of *Second International Scientists' Congress*, Imperial College, December 1988]
- P15. Of pencils, particles and unification
Physics World, September 1993, pp. 27–28 [one of the winning entries in a competition to explain the Higgs boson on one side of A4 set by William Waldegrave]
- P16. Obituary of Professor Abdus Salam
The Independent, 29 November 1996
- P17. Abdus Salam 1926–96 [Chris Isham & T.K.]
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