

Tony Sudbery's publications

Quantum Mechanics

- Radio discussion with Roger Penrose, Fay Dowker and Melvyn Bragg.
In Our Time, BBC Radio 4, 2 May 2002;
http://www.bbc.co.uk/radio4/history/inourtime_20020502.shtml.
- Diese verdammte quantenspringerei.
quant-ph/0011082; *Stud. Hist. Phil. Mod. Phys.* **33B**, 387–411 (2002).
- Getting all entangled up. *Physics World* **14**, no.5 (May 2001), 24–5.
- The interpretation of quantum mechanics. In *Quantum Physics: an introduction*, ed. J. Manners (IoP 2000) pp. 146–182.
- The fastest way from A to B. *Nature* **390**, 551–2 (1997).
- Illuminating entanglement. *Nature* **379**, 403–4 (1996).
- Instant Teleportation. *Nature* **362**, 586–7 (1993).
- Exclusion principle still intact. *Nature* **348**, 193–4 (1990).
- A quantum time machine. *Nature* **346**, 699–700 (1990).
- Comments on “The unique world of the Everett version of quantum theory”
by E. J. Squires. *Found. Phys. Lett.* **1**, 21–23 (1988).
- Testing interpretations of quantum mechanics. In *Microphysical Reality and
Quantum Formalism*, ed. G. Tarozzi and A. van der Merwe (Kluwer, 1988)
pp. 267–77.
- Objective interpretations of quantum mechanics and the possibility of a de-
terministic limit. *J. Phys. A* **20**, 1743–50 (1987).
- The observation of decay.
Ann. Phys. (N.Y.) **157**, 512–536 (1984); **176**, 181 (1987).
- Letters on quantum mechanics:
The Guardian 11 September 1985, *The Listener* 14 August 1986.
- Continuous state reduction. In *Quantum Concepts in Space and Time*, ed.
C. J. Isham and R. Penrose (Oxford University Press, 1986) pp. 65–83.
- Quantum Mechanics and the Particles of Nature* (358 pages)
(Cambridge University Press, 1986).
- Popper’s variant of the EPR experiment does not test the Copenhagen in-
terpretation. *Philosophy of Science* **52**, 470–476 (1985).

Quantum information theory

Entanglement and density-functional theory: testing approximations on Hooke's atom (with J. P. Coe and I. d'Amico). [arxiv:0712.3819](#); *Phys. Rev. B* **77**, 205122 (1977); *Virtual J. Nanoscale Science and Technology* (June 2008).

The disentangling power of unitaries (with L. Clarisse, S. Ghosh and S. Severini). [arXiv:quant-ph/0611075](#); *Phys. Lett. A* **365**, 400–402 (2007).

Alice and Bob get away with it: a playlet. [arXiv:physics/0606108](#); *Am. J. Phys.* **75**, 720–723 (2007); *Virtual J. Quantum Information*, July 2007.

The power of entanglement. *Bulg. J. Phys.* **33**, 10–21 (2006).

Compatibility of subsystem states (with P. Butterley and J. Szulc). [arXiv:quant-ph/0407227](#); *Found. Phys.* **36**, 83–101 (2006).

Entangling power of permutations (with L. Clarisse, S. Ghosh and S. Severini). [arXiv:quant-ph/0502040](#); *Phys. Rev. A* **72**, 012314/1–7 (2005); *Virtual J. Nanoscale Science and Technology* (July 2005)

Searching for highly entangled multi qubit states (with I. D. K. Brown, S. Stepney and S. L. Braunstein). *J. Phys. A* **38**, 1119–1131 (2005).

One-qubit reduced states of a pure many-qubit state: polygon inequalities (with A. Higuchi and H. A. Carteret). [arXiv:quant-ph/0209085](#); *Phys. Rev. Lett.* **90**, 107902-1–3 (2003).

Polynomial entanglement invariants: solution.
<http://www.imaph.tu-bs.de/qi/problems/3.html#Solution>.

On local invariants of pure 3-qubit states.
[arXiv:quant-ph/0001116](#); *J. Phys. A* **34**, 643–652 (2001).

Multipartite generalisation of the Schmidt decomposition (with H. A. Carteret and A. Higuchi). [quant-ph/0006125](#); *J. Math. Phys.* **41**, 7932–7939 (2000).

How entangled can two couples get? (with A. Higuchi). [arXiv:quant-ph/0005013](#); *Phys. Lett. A* **273**, 213–7 (2000).

Local symmetry properties of pure 3-qubit states (with H. A. Carteret). [arXiv:quant-ph/0001091](#); *J. Phys. A* **33**, 4981–5002 (2000).

Multiparticle entanglement (with H. A. Carteret, N. Linden and S. Popescu). *Found. Physics* **29**, 527–552 (1999).

Non-local properties of multi-particle density matrices (with N. Linden and S. Popescu). [arXiv:quant-ph/9801076](#); *Phys. Rev. Lett.* **83**, 243–247 (1999).

Quantum groups

- Representations of the quantum Lie algebra $\mathfrak{sl}(2)$ (with V. K. Dobrev).
arXiv:math.QA/9803095; *J. Phys. A* **31**, 6635–6645 (1998).
- Generalized Lie algebras of type A_n (with V. V. Lyubashenko).
arXiv:q-alg/9510004; *J. Math. Phys.* **39**, 3487–3504 (1998).
- Quantum-group gauge theory. In *Quantum Group Symposium at Group21*,
ed. H.-D. Doebner and V. K. Dobrev (Heron Press, Sofia, 1997), pp. 45–52.
- $SU_q(n)$ gauge theory. hep-th/9601033; *Phys. Lett. B***375**, 75–80 (1996).
- Yangian construction of the Virasoro algebra (with S. Z. Levendorskii).
arXiv:q-alg/9504005; *Lett. Math. Phys.* **37**, 243–247 (1996).
- Quantum supergroups of $GL(n|m)$ type: differential forms, Koszul complexes
and Berezinians (with V. V. Lyubashenko).
arXiv:hep-th/9311095; *Duke Math. J.* **90**, 1–62 (1997).
- Introduction to quantum groups. *Acta Phys. Pol.* **B27**, 2777–2800 (1996).
- The quantum orthogonal mystery. arXiv:hep-th/9407110; In *Quantum
Group Formalism and Applications*, ed. J. Lukierski, Z. Popowicz and J. Sobczyk
(Polish Scientific Publishers PWN, 1995) pp. 303–316.
- Quantum groups as invariance groups.
Proc. Symp. P. Math. **56** (2), 109–120 (1994)
- Quantum differential calculus and Lie algebras.
Int. J. Mod. Phys. A (Proc. Suppl.) **3A**, 228–231 (1993).
- Quantum vectors and quantum matrices. In *Quantum Symmetries*, ed. H.-
D. Doebner and V. K. Dobrev (World Scientific, 1993) pp. 147–162.
- Matrix-element bialgebras determined by quadratic coordinate algebras.
J. Algebra **158**, 375–399 (1993).
- The algebra of differential forms on a full matrix bialgebra.
Math. Proc. Camb. Phil. Soc. **114**, 111–130 (1993)
- Canonical differential calculus on quantum general linear groups and super-
groups. *Phys. Lett. B***284**, 61–65 and **291**, 519 (1992).
- Non-commuting coordinates and differential operators. In *Quantum Groups*,
ed. T.L.Curtright, D.B.Fairlie and C.Zachos (World Scientific, 1991), 33–52.
- Consistent multiparameter quantisation of $GL(n)$. *J. Phys. A* **23**, L697–704
(1990).

Division algebras and exceptional Lie algebras

Magic squares and matrix models of Lie algebras (with C. H. Barton).
[arXiv:math.RA/0203010](https://arxiv.org/abs/math.RA/0203010); *Adv. in Math.* **180**, 596–647 (2003).

Octonions and the Lorentz and conformal groups of ten-dimensional space-time (with K.-W. Chung). *Phys. Lett. B* **198**, 161–4 (1987).

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Octonionic geometry and simple supergravity in eleven dimensions (with T. Dereli, M. Panahimoghaddam and R. W. Tucker).
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Octonionic description of exceptional Lie superalgebras.
J. Math. Phys. **24**, 1986–1988 (1983).

Quaternionic analysis. *Math. Proc. Camb. Phil. Soc.* **85**, 199–225 (1979).

Group theory in physics

Computer-friendly d -tensor identities for $SU(n)$.
J. Phys. A **23**, L705–710 (1990).

Non-relativistic de Sitter space-time and the harmonic oscillator.
Nuclear Physics B **44**, 520–530 (1972).

Relativistic dynamical algebras for two particle systems.
Il Nuovo Cimento B **9**, 299–314 (1972).

Algebraic realisations of chiral $SU(3) \times SU(3)$ symmetry.
Nuclear Physics B **20**, 1–13 (1970).

Explicit representations of chiral invariant Lagrangian theories of hadron dynamics (with A. J. Macfarlane and P. H. Weisz).
Proc. Roy. Soc. A **314**, 217–250 (1970)

On the breaking of $SU(3) \times SU(3)$ symmetry (with B. Renner).
Nuclear Physics B **13**, 27–32 (1969).

On Gell-Mann's λ -matrices, d - and f -tensors, octets, and parametrisations of $SU(3)$ (with A. J. Macfarlane and P. H. Weisz).
Commun. Math. Phys. **11**, 77–90 (1968).

Miscellaneous mathematics

A generalised Poisson bracket and an associated natural one-form.
Math. Proc. Camb. Phil. Soc. **81**, 133–142 (1977).

Harmonic analysis of generalized vector functions, generalized spin-weighted functions and induced representations (with P. J. McCarthy).
J. Phys. A **10**, 331–338 (1977).

Some advances in the no-three-in-line problem (with R. R. Hall, T. H. Jackson and K. Wild). *J. Combinatorial Theory A***18**, 336–341 (1975).

The quadrilateral inequality in two dimensions.
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The number of distinct roots of a polynomial and its derivatives
Bull. London Math. Soc. **5**, 13–17 (1973).

On a conjecture of Erdős and Rényi concerning abelian groups
(with R. R. Hall). *J. London Math. Soc.* **6**, 177–189 (1972).

Miscellaneous physics

Fundamental flaw? (letter on sociology and physics)
Physics World **4** No. 1 (January 1991)

General solutions of covariant superstring equations of motion
(with C. A. Manogue). *Phys. Rev. D* **40**, 4073–7 (1989).

The rapid-dispersal approximation in radiative atomic processes.
Ann. Phys. (N.Y.) **188**, 1–18 (1988).

A vector Lagrangian for the electromagnetic field.
J. Phys. A **19**, L33–36 (1986).

The new analysis of things. *Annual Rep. Yorks. Phil. Soc.* (1985), 52–60.

Is something wrong with physics? (with Chris Clarke).
Theoria to Theory **14**, 247–257 (1981).

Two-component relativistic wave equations for spin-half particles (with J. F. Cornwell and C. G. Koutroulos). *Physica Scripta* **12**, 183–188 (1975).

Chiral Symmetry. *Cambridge Research* **6**, No.3 pp.2–6 (1970)

Letters on special relativity.
The Listener **82**, 52, 155, 315 and 525 (1969).

Miscellaneous philosophy

Why am I me? and why is my world so classical? [arXiv:quant-ph/0011084](https://arxiv.org/abs/quant-ph/0011084).

The necessity of not doing otherwise.

Australasian J. Phil. **58**, 280–283 (1980).

Scientific book reviews

Mathematics for Engineers and Scientists by Alan Jeffrey

New Scientist **44**, 202 (1969)

The Logical and Set-theoretic Foundations of Mathematics by Achim Zulauf

New Scientist **45**, 29 (1970)

Tantalizers by Martin Hollis

New Scientist **46**, 394 (1970)

The School Mathematics Project: The First Ten Years by Bryan Thwaites

New Scientist **57**, 326 (1973)

The World of Measurements by H. Arthur Klein

New Scientist **68**, 537 (1975)

Modern Logic and Quantum Mechanics by Rachel Wallace Garden

Eur. J. Phys. **6**, 634 (1985)

The Mystery of the Quantum World by Euan Squires

Physics Bulletin **37**, 1767 (1986)

The Quantum Universe by Tony Hey and Patrick Walters

Science for People No. 65 p.26 (1987)

Quantum Implications, ed. B. J. Hiley and F. D. Peat

Nature **331**, 26 (1988)

From Paradox to Reality by Fritz Rohrlich

Particles and Paradoxes by Peter Gibbins

Nature **332**, 18990 (1988)

Quantum Theory and Pictures of Reality, ed. W. Schommers

Contemp. Phys. **31**, 2789 (1990)

Islands of Truth by Ivars Peterson

Physics World Vol. 3 No. 12, pp. 513 (1990)

- More Surprises in Theoretical Physics* by Rudolf Peierls
Physics World Vol. 5 No. 4, p. 52 (1992)
- Quantum Theory: Concepts and Methods* by Asher Peres
Physics World Vol. 7 No. 4, p. 656 (1994)
- Algebra VII: Combinatorial Group Theory and Applications to Geometry*, ed.
A. N. Parshin and I. R. Shafarevich. *Contemp. Phys.* **35**, 456 (1994)
- From Number Theory to Physics*, ed. M. Waldschmidt et al.
Contemp. Phys. **35**, 53 (1994)
- The Quantum Labyrinth* by D. J. Hoekzema
Contemp. Phys. **35**, 67 (1994)
- Schrödinger's Kittens and the Search for Reality* by John Gribbin
Nature **375**, 644 (1995)
- Yang-Baxter Equation and Quantum Enveloping Algebras* by Zhong-Qi Ma
Contemp. Phys. **37**, 26970 (1996)
- Foundations of Quantum Group Theory* by Shahn Majid
Bull. London Math. Soc. **29**, 7589 (1997)
- Quantum Groups and their Representations* by Anatoli Klimyk and Konrad
Schmüdgen
Algebras of Functions on Quantum Groups by Leonid I. Korogodski and Yan
S. Soibelman
Bull. London Math. Soc. **32**, 499502 (2000)
- Not Even Wrong* by Peter Woit
LMS Newsletter No. 357 (March 2007)

Non-scientific Publications

Science or Fiction? A survey of attitudes

In *Beyond This Horizon*, ed. Christopher Carrell (Ceolfriith Press, 1974) pp. 67.

Articles in *The Encyclopedia of Science Fiction*, ed. Peter Nicholls (Granada, 1979):

Faster than Light, pp. 2189

Gravity, pp. 2623

Mathematics, pp. 3867

Physics, pp. 4601

(Editor) *Vector*, the Journal of the British Science Fiction Association Nos. 4749 (196768)

Two articles, a story and a poem in *Vector* (19679)

Two articles in *Speculation* (19713)

Thirteen book reviews in *Vector* (196774)

Six book reviews and a film review in *Speculation* (196772)

Book review in *Foundation* (1974)

Two letters on the English language in *New Statesman* (1975)

Four letters on the English language in *The Guardian* (197685)

Two letters on pornography in *The Guardian* (1983)

Two articles in *Crossword* (19801)

Letter on the English language in *C-ville Review* (1991)