

References

- [Arn66] V. Arnold, *Sur la géométrie différentielle des groupes de lie de dimension infinie et ses applications à l'hydrodynamique des fluides parfaits*, Annales de l'institut Fourier **16** (1966), no. 1, 319–361.
- [Bar63] Richard Barakat, *Theory of the coherency matrix for light of arbitrary spectral bandwidth*, J. Opt. Soc. Am. **53** (1963), no. 3, 317–322.
- [Bla60] W. Blaschke, *Kinematic and quaternionen*, Deutscher Verlag der Wissenschaften, Berlin, 1960.
- [BM41] Garrett Birkhoff and Saunders MacLane, *A Survey of Modern Algebra*, Macmillan, New York, 1941.
- [BW64] M. Born and E. Wolf, *Principles of optics*, 2nd ed., The Macmillan Co., New York, 1964.
- [Cox69] H. S. M. Coxeter, *Introduction to Geometry*, 2nd ed., John Wiley & Sons, New York, 1969.
- [Cur68] C. W. Curtis, *Linear algebra*, 2nd ed., Allyn and Bacon, Inc., Boston, 1968.
- [Ebe65] W. F. Eberlein, *Models of space-time*, Bull. Amer. Math. Soc. **71** (1965), 731–736.
- [Edm72] James D. Edmonds, *Nature's natural numbers: relativistic quantum theory over the ring of complex quaternions*, International Journal of Theoretical Physics **6** (1972), no. 3, 205–224.
- [Edm73a] James Edmonds, *Generalized charge in the eight-component spin-1/2 wave equation*, Foundations of Physics **3** (1973), no. 3, 313–319.
- [Edm73b] James D. Edmonds, *Hypermass generalization of einstein's gravitation theory*, International Journal of Theoretical Physics **7** (1973), no. 6, 475–482.
- [Edm74a] _____, *Five- and eight-vector extensions of relativistic quantum theory: The preferred reference frame*, International Journal of Theoretical Physics **10** (1974), no. 4, 273–290.
- [Edm74b] _____, *Five-dimensional space-time: Mass and the fundamental length*, International Journal of Theoretical Physics **11** (1974), no. 5, 309–315.
- [Edm75] _____, *Six bits for nine colored quarks*, International Journal of Theoretical Physics **13** (1975), no. 4, 259–263.
- [Ein05a] A. Einstein, *A heuristic viewpoint concerning the production and the transformation of light*, Ann. d. Physik **17** (1905), no. 4, 132.
- [Ein05b] _____, *On the electrodynamics of moving bodies*, Ann. d. Physik **17** (1905), no. 4, 891.

- [Ein09] ———, *On the development of our understanding of the nature and composition of radiation*, *Physikalische Zeitschrift* **10** (1909), no. 22, 817.
- [Fan51] U. Fano, *Note on quantum effects in optics*, *J. Opt. Soc. Am.* **41** (1951), no. 1, 58–59.
- [Fan54] ———, *A stokes-parameter technique for the treatment of polarization in quantum mechanics*, *Physical Review* **93** (1954), no. 1.
- [FM51] D. L. Falkoff and J. E. Macdonald, *On the stokes parameters for polarized radiation*, *J. Opt. Soc. Am.* **41** (1951), no. 11, 861–862.
- [Fok49] A. D. Fokker, *On the space-time geometry of a moving rigid body*, *Rev. Mod. Phys.* **21** (1949), no. 3, 406–408.
- [Fro75] Authur Frost, *Matrix formulation of special relativity in classical mechanics and electromagnetic theory*, *Foundations of Physics* **5** (1975), no. 4, 619–641.
- [Gel61] I. M. Gelfand, *Lectures on Linear Algebra*, Interscience Publishers, New York, 1961.
- [Gil06] Robert Gilmore, *Lie groups, lie algebras, and some of their applications*, Dover Publications, New York, 2006.
- [Gol50] Herbert Goldstein, *Classical mechanics*, Addison-Wesley Press, Cambridge, MA, 1950.
- [Got66] Kurt Gottfried, *Quantum mechanics*, W.A. Benjamin, New York, 1966 (English).
- [GR60] G. B. Parrent, Jr. and P. Roman, *On the Matrix Formulation of the Theory of Partial Polarization in Terms of Observables*, *Il Nuovo Cimento* **15** (1960), no. 3, 370–388.
- [Hal58] P. R. Halmos, *Finite-Dimensional Vector Spaces*, D. Van Nostrand Co., Princeton, 1958.
- [Hal74] P. Halevi, *Common properties of the vector product, poisson's bracket and the commutator bracket*, *American Journal of Physics* **42** (1974), no. 4, 328–330.
- [HK61] Kenneth Hoffman and Ray Alden Kunze, *Linear Algebra*, Prentice-Hall, Englewood Cliffs, N.J., 1961.
- [Hur45] Henry Hurwitz, Jr., *The statistical properties of unpolarized light*, *J. Opt. Soc. Am.* **35** (1945), no. 8, 525–531.
- [Jam74] James D. Edmonds, Jr., *Quaternion quantum theory: New physics or number mysticism?*, *American Journal of Physics* **42** (1974), no. 3, 220–223.
- [Kae65] F. A. Kaempffer, *Concepts in Quantum Mechanics*, Acad. Press, New York, 1965.
- [Kra58] H. A. Kramers, *Quantum Mechanics. (Transl. by D. ter Haar)*, North Holland Publ. Co., Amsterdam, 1958.

- [KS28] Felix Klein and Fr. Schilling, *Nicht-Euklidische Geometrie*, Julius Springer, Berlin, 1928 (German).
- [KS65] Felix Klein and Arnold Sommerfeld, *Über die theorie des kreisels : in vier heften*, Johnson Reprint Corp., New York, 1965 (German).
- [Lip02] Harry Lipkin, *Lie groups for pedestrians*, Dover Publications, New York, 2002.
- [MTW73] Charles Misner, Kip Thorne, and John Wheeler, *Gravitation*, W. H. Freeman & Co., San Francisco, 1973.
- [Pae69] E. R. Paerl, *Representations of the lorentz group and projective geometry*, Mathematisch Centrum, Amsterdam, 1969.
- [Pau58] W. Pauli, *Theory of relativity*, Pergamon Press, Oxford, 1958 (English).
- [Pay52] W. T. Payne, *Elementary Spinor Theory*, American Journal of Physics **20** (1952), no. 5, 253–262.
- [Pay55] ———, *Spinor Theory and Relativity. I*, American Journal of Physics **23** (1955), no. 8, 526–536.
- [Pay59] ———, *Spinor Theory and Relativity. II*, American Journal of Physics **27** (1959), no. 5, 318–328.
- [Per42] Francis Perrin, *Polarization of light scattered by isotropic opalescent media*, The Journal of Chemical Physics **10** (1942), no. 7, 415–427.
- [Poi92] J. H. Poincaré, *Theorie Mathematique de la Lumiere*, Carre, Paris, 1892.
- [Shu62] W. A. Shurcliff, *Polarized light: Production and use*, Harvard University Press, Cambridge, Mass., 1962.
- [Sto52] G. G. Stokes, *On the composition and resolution of streams of polarized light from different sources*, Trans. Camb. Phil. Soc. **9** (1852), 399–416.
- [Syn35] J. L. Synge, *Principal null-directions defined in space-time by an electromagnetic field*, University of Toronto Studies. Applied Mathematics Series, No. 1, The University of Toronto Press, Toronto, 1935.
- [Syn65] ———, *Relativity. the special theory*, 2nd ed., North-Holland Publishing Co., Amsterdam, 1965.
- [Tin64] M. Tinkham, *Group Theory and Quantum Mechanics*, McGraw-Hill, New York, 1964.
- [VY18] O. Veblen and I. W. Young, *Projective geometry*, vol. II, Ginn and Company, Boston, 1918.

- [Wei72] Steven Weinberg, *Gravitation and cosmology: Principles and applications of the general theory of relativity*, John Wiley & Sons, Inc., New York, 1972.
- [Wey50] Hermann Weyl, *The theory of groups and quantum mechanics*, Dover, New York, 1950.
- [Whi64] E. T. Whittaker, *A Treatise on the Analytical Dynamics of Particles and Rigid Bodies; with an Introduction to the Problem of Three Bodies*, second ed., Cambridge University Press, Cambridge, 1964.
- [Whi68] C. L. K. Whitney, *Pauli algebra techniques in special relativity*, Ph.D., MIT, Cambridge, MA, 1968.
- [Whi71] Cynthia Whitney, *Pauli-algebraic operators in polarization optics*, J. Opt. Soc. Am. **61** (1971), no. 9, 1207–1213.
- [Wie30] Norbert Wiener, *Generalized harmonic analysis*, Acta Mathematica **55** (1930), no. 1, 117–258.
- [Wig39] E.P. Wigner, *On unitary representations of the inhomogeneous Lorentz group*, Annals Math **40** (1939), 149–204.
- [Wig59] E. P. Wigner, *Group Theory and its Application to the Quantum Mechanics of Atomic Spectra*, Academic Press, New York, 1959.