Bibliography

- Ablowitz, M. J. & Clarkson, P. A. (1991), Solitons, Nonlinear Evolution Equations and Inverse Scattering, London Mathematical Society Lecture Notes 149, Cambridge University Press, Cambridge. 284
- Ablowitz, M. J. & Segur, H. (1981), Solitons and the Inverse Scattering Transform, SIAM Studies in Applied Mathematics, Vol. 4, SIAM, Philadelphia, PA. 284
- Acheson, D. J. (1990), Elementary Fluid Dynamics, Oxford University Press, Oxford. 46
- Airault, H. (1979), Rational solutions of Painlevé equations, Stud. Appl. Math., 61, 33-54.
- Anker, D. & Freeman, N. C. (1978), On the soliton solutions of the Davey-Stewartson equation for long waves, *Proc. Roy. Soc. A*, **360**, 529-40.
- Batchelor, G. K. (1967), An Introduction to Fluid Dynamics, Cambridge University Press, Cambridge. 46
- Bateman, H. (1932), Partial Differential Equations of Mathematical Physics, Cambridge University Press, Cambridge. 46
- Benjamin, T. B. (1962), The solitary wave on a stream with an arbitrary distribution of vorticity, J. Fluid Mech., 12, 97-116. 284
- Benjamin, T. B. & Feir, J. E. (1967), The disintegration of wave trains on deep water, I: Theory, J. Fluid Mech., 27, 417-30.
- Benney, D. J. (1974), Nonlinear waves, in *Nonlinear Wave Motion* (ed. A. C. Newell), American Mathematical Society, Providence, RI.
- Benney, D. J. & Bergeron, R. F. (1969), A new class of nonlinear waves in parallel flows, Stud. Appl. Math., 48, 181-204. 285
- Berezin, Yu. A. & Karpman, V. I. (1967), Nonlinear evolution of disturbances in plasmas and other dispersive media, *Sov. Phys. JETP*, 24(5), 1049-56.
- Blythe, P. A., Kazakia, Y. & Varley, E. (1972), The interaction of large amplitude shallow-water waves with an ambient shear flow: non-critical flows, J. Fluid Mech., 56, 241-55.
- Boussinesq, J. (1871), Théorie de l'intumescence liquid appelée onde solitaire ou de translation, se propageant dans un canal rectangulaire, *Comptes Rendus Acad. Sci. (Paris)*, **72**, 755-9. 285
- Bretherton, F. P. (1964), Resonant interaction between waves. The case of discrete oscillations, *J. Fluid Mech.*, **20**, 457–79.

- Brotherton-Ratcliffe, R. V. & Smith, F. T. (1989), Viscous effects can destabilize linear and nonlinear water waves, *Theoret. Comput. Fluid Dynamics*, 1, 21-39. 284
- Burns, J. C. (1953), Long waves in running water, *Proc. Camb. Phil. Soc.*, 49, 695-706. 284
- Bush, A. W. (1992), Perturbation Methods for Engineers and Scientists, CRC Press, Boca Raton. 46
- Byatt-Smith, J. G. B. (1971), The effect of laminar viscosity on the solution of the undular bore, J. Fluid Mech., 48(1), 33-40.
- Calogero, F. & Degasperis, A. (1982), Spectral Transform and Solitons I, North-Holland, Amsterdam. 284
- Carrier, G. F. & Greenspan, H. P. (1958), Water waves of finite amplitude on a sloping beach, J. Fluid Mech., 4, 97-109. 182
- Copson, E. T. (1967), Asymptotic Expansions, Cambridge University Press, Cambridge. 181
- Cornish, V. (1910), Waves of the Sea and other Water Waves, T. Fisher Unwin, London. 182
- Courant, R. & Friedrichs, K. O. (1967), Supersonic Flow and Shock Waves. Interscience, New York. 182
- Courant, R. & Hilbert, D. (1953), Methods of Mathematical Physics (2 vols.), Wiley-Interscience, New York. 46
- Craik, A. D. D. (1988), Wave Interactions and Fluid Flows, Cambridge University Press, Cambridge. 346, 387
- Crapper, G. D. (1984), Introduction to Water Waves, Ellis Horwood, Chichester. 46, 181, 182
- Davey, A. & Stewartson, K. (1974), On three-dimensional packets of surface waves, *Proc. Roy. Soc. A*, 338, 101-10. 346
- Davis, R. E. (1969), On the high Reynolds number flow over a wavy boundary, J. Fluid Mech., 36, 337-46. 285
- Dean, R. G. & Dalrymple, R. A. (1984), Water Wave Mechanics for Engineers and Scientists, World Scientific, Singapore. 181
- Debnath, L. (1994), Nonlinear Water Waves, Academic Press, London. 181, 182, 284, 346, 388
- Dickey, L. A. (1991), Soliton Equations and Hamiltonian Systems, Advanced Series in Mathematical Physics, Vol. 12, World Scientific, Singapore. 284
- Dingle, R. B. (1973), Asymptotic Expansions: their Derivation and Interpretation, Academic Press, London. 46
- Djordjevic, V. D. & Redekopp, L. G. (1978), On the development of packets of surface gravity waves moving over an uneven bottom, *J. Appl. Math. Phys.*, 29, 950-62. 346
- Dodd, R. K., Eilbeck, J. C., Gibbon, J. D. & Morris, H. C. (1982), Solitons and Nonlinear Wave Equations, Academic Press, London. 284
- Drazin, P. G. & Johnson, R. S. (1989), Solitons: an Introduction, Cambridge University Press, Cambridge. 182, 284
- Dressler, R. F. (1949), Mathematical solution of the problem of roll waves in inclined open channels, *Comm. Pure Appl. Math.*, 2, 149-94.
- Dryuma, V. S. (1974), Analytic solution of the two-dimensional Korteweg-de Vries (KdV) equation, Sov. Phys. JETP Lett., 19, 387-8.
- (1983), On the integration of the cylindrical KP equation by the method of the inverse problem of scattering theory, Sov. Math. Dokl., 27, 6-8.
- Eckhaus, W. (1979). Asymptotic Analysis of Singular Perturbations, North-Holland, Amsterdam. 46

- Faddeev, L. D. & Takhtajan, L. A. (1987), Hamiltonian Methods in the Theory of Solitons, Springer-Verlag, Berlin. 284
- Fermi, E., Pasta, J. & Ulam, S. M. (1955), Studies in nonlinear problems, Tech. Rep., LA-1940, Los Alamos Sci. Lab., New Mexico. (Also in Newell, A. C. (ed.) (1979), Nonlinear Wave Motion, American Mathematical Society, Providence, RI.)
- Forsyth, A. R. (1921), A Treatise on Differential Equations, MacMillan, London.
- Freeman, N. C. (1972), Simple waves on shear flows: similarity solutions, J. Fluid. Mech., 56, 257-63.
- (1980), Soliton interactions in two dimensions, Adv. Appl. Mech., 20, 1-37.
- (1984), Soliton solutions of nonlinear evolution equations, IMA J. Appl. Math., 32, 125-45.
- Freeman, N. C. & Davey, A. (1975), On the evolution of packets of long surface waves, *Proc. Roy. Soc. A*, 344, 427–33. 346
- Freeman, N. C. & Johnson, R. S. (1970), Shallow water waves on shear flows, J. Fluid Mech., 42, 401-9. 284
- Gardner, C. S., Greene, J. M., Kruskal, M. D. & Miura, R. M. (1967), Method for solving the Korteweg-de Vries equation, *Phys. Rev. Lett.*, 19, 1095-7.
- Garabedian, P. R. (1964), Partial Differential Equations, Wiley, New York. 46, 182
- Green, G. (1837), On the motion of waves in a variable canal of small depth and width, *Camb. Trans.* VI (*Papers*, p. 225). 285
- Grimshaw, R. (1970), The solitary wave in water of variable depth, J. Fluid Mech., 42, 639-56. 285
- (1971), The solitary wave in water of variable depth, Part 2, J. Fluid Mech., 46, 611-22. 285
- Haberman, R. (1972), Critical layers in parallel flows, Stud. Appl. Math., LI(2), 139-61. 285
- (1987), Elementary Applied Partial Differential Equations, Prentice-Hall, London. 46
- Hanson, E. T. (1926), The theory of ship waves, *Proc. Roy. Soc. A*, 111, 491–529. *181*
- Hasimoto, H. & Ono, H. (1972), Nonlinear modulation of gravity waves, J. Phys. Soc. Japan, 33, 805-11. 346
- Hardy, G. H. (1949), Divergent Series, Clarendon Press, Oxford. 46
 Hinch, E. J. (1991), Perturbation Methods, Cambridge University Press, Cambridge. 46
- Hirota, R. (1971), Exact solution of the Korteweg-de Vries equation for multiple collisions of solitons, *Phys. Rev. Lett.*, 27, 1192-4.
- (1973), Exact N-soliton solution of the wave equation of long waves in shallow water and in nonlinear lattices, J. Math. Phys., 14, 810-14.
- Hui, W. H. & Hamilton, J. (1979), Exact solutions of three-dimensional nonlinear Schrödinger equation applied to gravity waves, J. Fluid Mech., 93, 117-33.
- Ince, E. L. (1927), Ordinary Differential Equations, Longmans, Green, London (also Dover, New York, 1956).
- Infeld, E. & Rowlands, G. (1990), Nonlinear Waves, Solitons and Chaos, Cambridge University Press, Cambridge. 284, 346
- Jeffreys, H. & Jeffreys, B. S. (1956), Methods of Mathematical Physics, Cambridge University Press, Cambridge. 46

- Johnson, R. S. (1970), A non-linear equation incorporating damping and dispersion, J. Fluid Mech., 42(1), 49-60.
- (1972), Shallow water waves on a viscous fluid the undular bore, *Phys. Fluids*, **15**(10), 1693–9.
- (1973), On the development of a solitary wave moving over an uneven bottom, *Proc. Camb. Phil. Soc.*, **73**, 183–203. 285
- (1976), On the modulation of water waves on shear flows, Proc. Roy. Soc. A, 347, 537-46. 346
- (1977), On the modulation of water waves in the neighbourhood of $kh \simeq 1.363$, *Proc. Roy. Soc. A*, 357, 131-41.
- (1980), Water waves and Korteweg-de Vries equations, J. Fluid Mech., 97, 701-19. 284
- (1982), On the oblique interaction of a large and a small solitary wave, J. Fluid Mech., 120, 49-70. 285
- (1986), On the nonlinear critical layer below a nonlinear unsteady surface wave, J. Fluid Mech., 167, 327-51. 285
- (1990), Ring waves on the surface of shear flows: a linear and nonlinear theory, J. Fluid Mech., 215, 145-60. 285
- (1991), On solutions of the Burns condition (which determines the speed of propagation of linear long waves on a shear flow with or without a critical layer), Geophys. Astrophys. Fluid Dynamics, 57, 115–33. 284
- (1994), Solitary wave, soliton and shelf evolution over variable depth, J. Fluid Mech., 276, 125-38. 285
- (1996), A two-dimensional Boussinesq equation for water waves and some of its solutions, J. Fluid Mech., 323, 65-78.
- Kadomtsev, B. P. & Petviashvili, V. I. (1970), On the stability of solitary waves in weakly dispersing media, Sov. Phys. Dokl., 15, 539-41. 284
- Kakutani, T. (1971), Effects of an uneven bottom on a gravity wave, J. Phys. Soc. Japan, 30, 272. 285
- Kakutani, T. & Matsuuchi, K. (1975), Effect of viscosity on long gravity waves, J. Phys. Soc. Japan, 39, 237-45.
- Kelvin, Lord (Sir W. Thomson) (1887), On the waves produced by a single impulse in water of any depth, or in a dispersive medium, *Proc. Roy. Soc.* A, 42, 80-5.
- Keulegan, G. H. (1948), Gradual damping of solitary waves, J. Res. Nat. Bur. Stand., 40, 487-98.
- Kevorkian, J. & Cole, J. D. (1985), Perturbation Methods in Applied Mathematics, Springer-Verlag, New York. 46
- Knickerbocker, C. J. & Newell, A. C. (1980), Shelves and the Korteweg-de Vries equation, J. Fluid Mech., 98, 803-18. 285
- (1985), Reflections from solitary waves in channels of decreasing depth,
 J. Fluid Mech., 153, 1-16. 285
- Korteweg, D. J. & de Vries, G. (1895), On the change of form of long waves advancing in a rectangular canal, and on a new type of long stationary waves, *Phil. Mag.* (5), 39, 422-43. 284
- Lamb, G. L., Jr (1980), Elements of Soliton Theory, Wiley-Interscience, New York. 284
- Lamb, H. (1932), Hydrodynamics, Cambridge University Press, Cambridge. 46
 Landau, L. D. & Lifschitz, E. M. (1959), Fluid Mechanics, Pergamon, London.
 46
- Lax, P. D. (1968), Integrals of nonlinear equations of evolution and solitary waves, *Comm. Pure Appl. Math.*, 21, 467-90.

- Leibovich, S. & Randall, J. D. (1973), Amplification and decay of long nonlinear waves, J. Fluid Mech., 58, 481-93, 285
- Lighthill, M. J. (1965), Group velocity, J. Inst. Maths. Applics., 1, 1-28. 46
- (1978), Waves in Fluids, Cambridge University Press, Cambridge. 46, 182, 387
- (1986), An Informal Introduction to Theoretical Fluid Mechanics, Clarendon Press, Oxford. 46
- Lighthill, M. J. & Whitham, G. B. (1955), On kinematic waves, *Proc. Roy. Soc.* A, 229, 281-345.
- Longuet-Higgins, M. S. (1974), On mass, momentum, energy and circulation of a solitary wave, *Proc. Roy. Soc. A*, 337, 1-13. *182*
- (1975), Integral properties of periodic gravity waves of finite amplitudes, Proc. Roy. Soc. A, 342, 157-74. 182
- Longuet-Higgins, M. S. & Cokelet, E. D. (1976), The deformation of steep surface waves on water I. A numerical method of computation, *Proc. Roy. Soc. A*, 350, 1–26. 182
- Longuet-Higgins, M. S. and Fenton, J. (1974), Mass, momentum, energy and circulation of a solitary wave II, *Proc. Roy. Soc. A*, 340, 471–93. 182
- Longuet-Higgins, M. S. & Fox, M. J. H. (1977), Theory of the almost highest wave: The inner solution, *J. Fluid Mech.*, **80**, 721–42.
- Luke, J. C. (1967), A variational principle for a fluid with a free surface, J. Fluid Mech., 27, 395-7.
- McCowan, J. (1891), On the solitary wave, Phil. Mag. (5), 32, 45-58.
- Ma, Y.-C. (1979), The perturbed plane-wave solution of the cubic Schrödinger equation, Stud. Appl. Math., 60, 43-58.
- Maslowe, S. A. & Redekopp, L. G. (1980), Long nonlinear waves in stratified shear flows, J. Fluid Mech., 101, 321-48. 285
- Matsuno, Y. (1984), Bilinear Transformation Method. Academic Press, Orlando, FL. 284
- Matveev, V. B. & Salle, M. A. (1991), Darboux Transformations and Solitons, Springer-Verlag, Berlin.
- Mei, C. C. (1989), The Applied Dynamics of Ocean Surface Waves, World Scientific, Singapore. 181, 182, 346, 387
- Miles, J. W. (1977a), Obliquely interacting solitary waves, J. Fluid Mech., 79, 157-69. 285
- (1977b), Resonantly interacting solitary waves, J. Fluid Mech., 79, 171-9.
- (1978), An axisymmetric Boussinesq wave, J. Fluid Mech., 84, 181-91. 284
- (1979), On the Korteweg-de Vries equation for a gradually varying channel, J. Fluid Mech., 91, 181-90. 285
- (1981), The Korteweg-de Vries equation: a historical essay, *J. Fluid Mech.*, **106**, 131-47. 284
- Miura, R. M. (1974), Conservation laws for the fully nonlinear long wave equations, *Stud. Appl. Math.*, **LIII**(1), 45–56.
- Miura, R. M., Gardner, C. S. & Kruskal, M. D. (1968), Korteweg-de Vries equation and generalizations. II. Existence of conservation laws and constants of motion, J. Math. Phys., 9, 1204-9.
- Newell, A. C. (1985), Solitons in Mathematics and Physics, SIAM, Philadelphia.
- Olver, F. W. J. (1974), Asymptotics and Special Functions, Academic Press, New York. 181

- Ott, E. & Sudan, R. N. (1970), Damping of solitary waves, *Phys. Fluids*, 13, 1432.
- Paterson, A. R. (1983), A First Course in Fluid Dynamics, Cambridge University Press, Cambridge. 46
- Peregrine, D. H. (1967), Long waves on a beach, J. Fluid Mech., 27, 815-27.
- (1983), Water waves, nonlinear Shrödinger equations and their solutions, J. Austral. Math. Soc. Ser. B, 25, 16-43.
- Piaggio, H. T. H. (1933), An Elementary Treatise on Differential Equations and Applications, Bell, London.
- Rayleigh, Lord (J. W. Strutt) (1876), On waves, Phil. Mag. (5), 1, 257-79.
- Redekopp, L. G. (1977), On the theory of solitary Rossby waves, J. Fluid Mech., 82, 725-45. 285
- Remoissenet, M. (1994), Waves Called Solitons, Springer-Verlag, Berlin. 284 Rogers, C. & Shadwick, W. F. (1982), Bäcklund Transformations and their
- Applications, Academic Press, New York. 284
 Rosenhead, L. (ed.) (1964), Laminar Boundary Layers, Oxford University Press, Oxford. 46
- Russell, J. S. (1844), Report on waves, Rep. 14th Meet. Brit. Assoc. Adv. Sci., York, 311-90. John Murray, London.
- Satsuma, J. & Yajima, N. (1974), Initial value problems of one-dimensional self modulation of nonlinear waves in dispersive media, Supp. Prog. Theoret. Phys., 55, 284-306.
- Schlichting, H. (1960), Boundary Layer Theory, McGraw-Hill, New York. 46 Schuur, P. C. (1986), Asymptotic Analysis of Soliton Problems, Lecture Notes in Mathematics, No. 1232, Springer-Verlag, Berlin. 284
- Shabat, A. B. (1973), On the Korteweg-de Vries equation, Sov. Math. Dokl., 14, 1266-9.
- Smith, D. R. (1985), Singular Perturbation Theory, Cambridge University Press.
 46
- Sneddon, I. N. (1957), Elements of Partial Differential Equations, McGraw-Hill, New York. 46
- Starr, V. T. (1947), Momentum and energy integrals for gravity waves of finite height, J. Mar. Res., 6, 175-93.
- Stoker, J. J. (1957), Water Waves, Interscience, New York. 46, 181, 182
- Stokes, G. G. (1847), On the theory of oscillatory waves, *Trans. Camb. Phil. Soc.*, 8, 441-55.
- (1880), Considerations relative to the greatest height of oscillatory irrotational waves which can be propagated without change of form, Math. Phys. Papers 1, 1, 225-8.
- Tanaka, M. (1993), Mach reflection of a large-amplitude solitary wave, J. Fluid Mech., 248, 637-61. 285
- Tappert, F. D. & Zabusky, N. J. (1971), Gradient-induced fission of solitons, *Phys. Rev. Lett.*, 27, 1774-6. 285
- Thompson, P. D. (1949), The propagation of small surface disturbances through rotational flow, Ann. NY Acad. Sci., 51, 463-74. 284
- Timman, R., Hermans, A. J. & Hsiao, G. C. (1985), Water Waves and Ship Hydrodynamics, Martinus Nijhoff & Delft University Press, Delft. 181
- Turpin, F.-M., Benmoussa, C. & Mei, C. C. (1983), Effects of slowly varying depth and current on the evolution of a Stokes wavepacket, *J. Fluid Mech.*, 132, 1-23. 346

- van Dyke, M. (1964), Perturbation Methods in Fluid Mechanics, Academic Press, New York (annotated version: 1975, Parabolic Press, Palo Alto). 46
- Varley, E. & Blythe, P. A. (1983), Long eddies in sheared flows, Stud. Appl. Math., 68, 103-88. 285
- Velthuizen, H. G. M. & van Wijngaarden, L. (1969), Gravity waves over a non-uniform flow, J. Fluid Mech., 39, 817-29. 284
- Vladimirov, V. S. (1984), Equations of Mathematical Physics, Mir, Moscow. 46 Watson, E. J. (1964), The radial spread of a liquid jet over a horizontal plane, J. Fluid Mech., 20, 481-99.
- Webster, A. G. (1966), Partial Differential Equations of Mathematical Physics, Dover, New York. 46
- Weinberger, H. F. (1965), A First Course in Partial Differential Equations, Xerox, Lexington, MA. 46
- Whitham, G. B. (1959), Some comments on wave propagation and shock wave structure with application to magnetohydrodynamics, *Comm. Pure Appl. Math.*, 12, 113-58.
- (1965), A general approach to linear and non-linear dispersive waves using a Lagrangian, J. Fluid Mech., 22, 272-83.
- (1974), Linear and Nonlinear Waves, Wiley, New York. 46, 181, 346
- (1979), Lectures on Wave Propagation: Tata Institute of Fundamental Research, Bombay, Springer-Verlag, Berlin. 181, 182
- Yih, C.-S. (1972), Surface waves in flowing water, J. Fluid Mech., 51, 209-20. 284
- Yuen, H. C. & Lake, B. M. (1982), Nonlinear dynamics of deep-water gravity waves, Adv. Appl. Mech., 22, 67-229.
- Zabusky, N. J. & Kruskal, M. D. (1965), Interactions of 'solitons' in a collisionless plasma and the recurrence of initial states, *Phys. Rev. Lett.*, 15, 240-3.
- Zakharov, V. E. & Shabat, A. B. (1972), Exact theory of two-dimensional self-focussing and one-dimensional self-modulation of waves in nonlinear media, *Sov. Phys. JETP*, **34**, 62–9.
- (1974), A scheme for integrating the nonlinear equations of mathematical physics by the method of the inverse scattering problem I, Funct. Anal. Appl., 8, 226-35.