CURRICULUM VITAE

July 26, 2022

PERSONAL DATA

Dual Swedish and US citizen.

Address:	University of Colorado, Department of Applied Mathematics, 526 UCB Boulder, CO 80309, USA
Tel:	303 - 492 5915
E-mail:	fornberg@colorado.edu
Home page:	https://www.colorado.edu/amath/bengt-fornberg-0

EDUCATION

Studies at the universities of Uppsala and Lund, Sweden, starting 1966. Degrees from Uppsala University:

1972	Ph.D.	In numerical analysis (Supervisor Prof. H.-O. Kreiss).
	Dr. Jubilaris	Uppsala University, 2022.
1969	FK, FM	(Corresponding to BS)

EMPLOYMENT

1995 - present	Professor of Applied Mathematics, University of Colorado, Boulder (Emeritus 2022)
1984 - 1995	Research Associate, Exxon Research and Engineering Company
1974 - 1984	Department of Applied Mathematics, California Institute of Technology: Bateman Research Instructor to Associate Professor (with tenure)
1972 - 1974	Fellow, Data Handling Division, CERN, European Organization for Nuclear Re search, Geneva, Switzerland.
1967 - 1972	Assistant, Departments of Mathematics and Computer Science, Uppsala Univerity.

VISITING POSITIONS

Full time resident:

Fall 2010	Visiting Fellow, Oxford Center for Collaborative Applied Mathematics. Also "Oliver Smithies Lecturer", Balliol College, Oxford. (one semester).
Spring 2009	Visiting Fellow, Oxford Center for Collaborative Applied Mathematics (seven weeks).
Spring 2002	Visiting Scholar, Hong Kong Baptist University, Hong Kong, China (one semester).
Fall 2001	Visiting Professor, Uppsala University, Sweden (one semester).
1981 - 1982	Guggenheim Fellow and Senior Visitor, Cambridge University, England (one academic year).

Other academic appointments (part time resident):

2007 - 2012	Adjunct Professor of Mathematics, Kyungpook National University, Daegu, South Korea.
2006 - present	Faculty Member, Center for Research on Training, University of Colorado, Boulder.
1991 - 1997	Visiting Professor of Mathematics, University of Strathclyde, Glasgow, Scotland.

PRIMARY RESEARCH INTERESTS

Numerical Analysis: High accuracy finite difference, pseudospectral, and radial basis function methods for solving partial differential equations.

Computational Wave- and Fluid Dynamics: Electromagnetic waves, flows past objects, geophysical flows.

Analytic functions (Painlevé equations, computational methods, etc.)

SELECT HONORS

2014	University of Colorado Boulder Faculty Assembly Award for Excellence in Research, Scholarly and Creative Work.
2014	Fellow of Society for Industrial and Applied Mathematics (SIAM)
1981	Guggenheim Fellow.

PUBLICATIONS

BOOKS

1. **Studiematerial till Numerisk Analys I** (B. Engquist, B.F. and J. Johansson, exercise book in numerical analysis, in Swedish). Studentlitteratur 1970. (Two separate abbreviated versions published later)

2. **A Practical Guide to Pseudospectral Methods**, Cambridge Monographs on Applied and Computational Mathematics, No 1, Cambridge University Press (1996); Paperback edition (1998).

3. **A Primer on Radial Basis Functions with Applications to the Geosciences** (B.F. and N. Flyer), SIAM (2015).

4. **Complex Variables and Analytic Functions: An Illustrated Introduction** (B.F. and C. Piret), SIAM (2020).

REFEREED JOURNAL ARTICLES

1. **A method for acceleration of the convergence of infinite series** (A. Beckman, B.F. and A. Tengvald), *BIT* 9 (1969), 78-80.

2. **On the instability of leap-frog and Crank-Nicolson approximations of a nonlinear partial differential equation**, *Mathematics of Computation* 27 (1973), 45-57.

3. **On a Fourier method for the integration of hyperbolic equations**, *SIAM Journal on Numerical Analysis* 12 (1975), 509-528.

4. **Complex zeros of the Jonquière or polylogarithm function** (B.F. and K.S. Kölbig), *Mathematics of Computation* 29 (1975), 582-599.

5. **A numerical study of 2-D turbulence**, *Journal of Computational Physics* 25 (1977), 1-31.

6. **A numerical and theoretical study of certain nonlinear wave phenomena** (B.F. and G.B. Whitham), *Philosophical Transactions of the Royal Society, London, Ser.A*, Vol 289 (1978), 373-404.

7. **A numerical study of steady viscous flow past a circular cylinder**, *Journal of Fluid Mechanics*, 98 (1980), 819-855.

8. **A numerical method for conformal mappings**, *SIAM Journal on Scientific and Statistical Computing* 1 (1980), 386-400.

9. **A vector implementation of the fast Fourier transform algorithm**, *Mathematics of Computation* 36 (1981), 189-191.

10. **Numerical differentiation of analytic functions**, *ACM Transactions on Mathematical Software*, 7 (1981), 512-526.

11. **Algorithm 579: CPSC: Complex Power Series Coefficients**, *ACM Transactions on Mathematical Software*, 7 (1981), 542-547.

12. **Calculations of laminar viscous flow over a moving wavy surface** (E.A. Caponi, B.F., D.D. Knight, J.W. McLean, P.G. Saffman and H.G. Yuen), *Journal of Fluid Mechanics*, 124 (1982), 347-362.

13. **A numerical method for conformal mapping of doubly connected regions**, *SIAM Journal on Scientific and Statistical Computing* 5 (1984), 771-783.

14. **Steady flow past a circular cylinder up to Reynolds number 600**, *Journal of Computational Physics* 61 (1985), 297-320.

15. **The pseudospectral method: Comparisons with finite differences for the elastic wave equation**, *Geophysics*, 52 (1987), 483-501.

16. **The pseudospectral method: Accurate representation of interfaces in elastic wave calculations**, *Geophysics*, 53 (1988), 625-637.

17. **Steady viscous flow past a sphere at high Reynolds numbers**, *Journal of Fluid Mechanics*, 190 (1988), 471-489.

18. **Generation of finite difference formulas on arbitrarily spaced grids**, *Mathematics of Computation*, 51 (1988), 699-706.

19. **High-order finite differences and the pseudospectral method on staggered grids**, *SIAM J. Num. Anal.*, 27 (1990), 904-918.

20. **An improved pseudospectral method for initial-boundary value problems**, *Journal of Computational Physics*, 91 (1990), 381-397.

21. **Steady incompressible flow past a row of circular cylinders**, *Journal of Fluid Mechanics*, 225 (1991), 655-671.

22. **Discretization errors at free boundaries of the Grad-Schlüter-Shafranov equation** (R. Meyer-Spasche and B.F.), *Numerische Mathematik*, 59 (1991), 683-710.

23. **A finite difference procedure for a class of free boundary problems** (B.F. and R. Meyer-Spasche), *Journal of Computational Physics*, 102 (1992), 72-77.

24. **Flow past a row of flat plates at large Reynolds numbers** (R. Natarajan, B.F. and A. Acrivos), *Proc. Royal Society London, A* 441 (1993), 211-235.

25. **A compact fourth order finite difference scheme for the steady incompressible Navier-Stokes equations** (M. Li, T. Tang and B.F.), *Int. J. for Numerical Methods in Fluids*, 20 (1995), 1137-1151.

26. **A pseudospectral approach for polar and spherical geometries**, *SIAM J. Sci. Comput.*, 16 (1995), 1071-1081.

27. **A new numerical algorithm for the analytic continuation of Green's functions** (V.D. Natoli, M.H. Cohen and B.F.), *Journal of Computational Physics*, 126 (1996), 99-108.

28. **A high-order finite difference method applied to large Rayleigh number mantle convection** (T.B. Larsen, D.A. Yuen, J. Moser and B.F.), *Geophys. Astrophys. Fluid Dyn*. 84 (1997), 53-83.

29. **Comparison of finite difference- and pseudospectral methods for convective flow over a sphere** (B.F. and D. Merrill), *Geophysical Research Letters* 24, No 24 (1997), 3245-3248.

30. **A block pseudospectral method for Maxwell's equations: I. One-dimensional case** (T.A. Driscoll and B.F.), *Journal of Computational Physics* 140 (1998), 47-65.

31. **Calculations of weights in finite difference formulas**, SIAM Review, 40 (1998), 685-691.

32. **Large-scale modeling of ultrasound transducer pulses in lossy, nonlinear tissue** (G. Wojcik, J. Mould, L. Carcione, B.F., R. Waag and C. Ayter), *J. Acoustic Soc. America*, 104, 1843 (1998), https://doi.org/10.1121/1.424432

33. **On the chance of freak waves at sea** (B.S. White and B.F.), *Journal of Fluid Mechanics* 355 (1998), 113-138.

34. **Block-pseudospectral methods for Maxwell's equations: II. Two-dimensional, discontinuous-coefficient case** (T.A. Driscoll and B.F.), *SIAM J. Sci. Comput.* 21 (1999), 1146-1167.

35. **Spatial finite difference approximations for wave-type equations** (B.F. and M. Ghrist), *SIAM J. Num. Anal.* 37 (1999), 105-130.

36. **A fast spectral algorithm for nonlinear wave equations with linear dispersion** (B.F. and T.A. Driscoll), *Journal of Computational Physics*, 155 (1999), 456-467.

37. **Some steady vortex flows past a circular cylinder** (A. Elcrat, B.F., M. Horne and K. Miller), *Journal of Fluid Mechanics*, 409 (2000), 13-27.

38. **Staggered time integrators for wave equations** (M. Ghrist, B.F. and T.A. Driscoll), *SIAM J. Num. Anal.* 38 (2000), 718-741.

39. **Note on nonsymmetric finite differences for Maxwell's equations** (T.A. Driscoll and B.F.), *Journal of Computational Physics*, 161 (2000), 723-727.

40. **Some steady axisymmetric vortex flows past a sphere** (A. Elcrat, B.F. and K. Miller), *Journal of Fluid Mechanics*, 433 (2001), 315-328.

41. **A Padé-based algorithm for overcoming Gibbs' phenomenon** (T.A. Driscoll and B.F.), *Numerical Algorithms* 26 (2001), 77-92.

42. **Interpolation in the limit of increasingly flat radial basis functions** (T.A. Driscoll and B.F.), *Computers and Mathematics with Applications*, 43 (2002), 413-422.

43. **Observations on the behavior of radial basis function approximations near boundaries** (B.F., T.A. Driscoll, G. Wright and R. Charles), *Computers and Mathematics with Applications*, 43 (2002), 473-490.

44. **A numerical study of some radial basis function based solution methods for elliptic PDEs** (E. Larsson and B.F.), *Computers and Mathematics with Applications*, 46 (2003), 891-902.

45. **A split step approach for the 3-D Maxwell's equations** (J. Lee and B.F.), *Journal of Computational and Applied Mathematics*, 158 (2003), 485-505.

46. **Accurate numerical resolution of transients in initial-boundary value problems for the heat equation** (N. Flyer and B.F.) *Journal of Computational Physics* 184 (2003), 526-539.

47. **On the nature of initial-boundary value solutions for dispersive equations** (N. Flyer and B.F.), *SIAM J. Appl. Math.*, 64 (2003), 546-564.

48. **Some unconditionally stable time stepping methods for the 3-D Maxwell's equations** (J. Lee and B.F.), *Journal of Computational and Applied Mathematics* 166 (2004), 497-523.

49. **Some observations regarding interpolants in the limit of flat radial basis functions** (B.F., G. Wright and E. Larsson), *Computers and Mathematics with Applications*, 47 (2004), 37-55.

50. **Stable computation of multiquadric interpolants for all values of the shape parameter** (B.F. and G. Wright), *Computers and Mathematics with Applications* 48 (2004), 853-867.

51. **Magnetic field confinement in the solar corona. I. Force-free magnetic fields** (N. Flyer, B.F., S. Thomas and B.C. Low), *The Astrophysical Journal* 606 (2004), 1210-1222.

52. **Theoretical and computational aspects of multivariate interpolation with increasingly flat radial basis functions** (E. Larsson and B.F.), *Computers and Mathematics with Applications* 49 (2005), 103-130.

53. **Accuracy of radial basis function interpolation and derivative approximation on 1-D infinite grids** (B.F. and N. Flyer), *Advances in Computational Mathematics* 23 (2005), 5-20.

54. **Magnetic field confinement in the solar corona. II. Field-plasma interaction** (N. Flyer, B.F., S. Thomas and B.C. Low), *The Astrophysical Journal* 631 (2005), 1239-1259.

55. **Stability of vortices in equilibrium with a cylinder** (A. Elcrat, B.F., and K. Miller), *J. Fluid. Mech.* 544 (2005), 53-68.

56. **Scattered node compact finite difference-type formulas generated from radial basis functions** (G.B. Wright and B.F), *Journal of Computational Physics* 212 (2006), 99-123.

57. **A new class of oscillatory radial basis functions** (B.F., E. Larsson and G. Wright), *Computers and Mathematics with Applications* 51 (2006), 1209-1222.

58. **A pseudospectral fictitious point method for high order initial-boundary value problems**, *SIAM J. Sci. Comp.* 28 (2006), 1716-1729.

59. **Stability and accuracy of time-extrapolated ADI-FDTD methods for solving wave equations** (B.F., J. Zuev, and J. Lee), *Journal of Computational and Applied Mathematics* 200 (2007), 178-192.

60. **The Runge phenomenon and spatially variable shape parameters in RBF interpolation** (B.F. and J. Zuev), *Computers and Mathematics with Applications* 54 (2007), 379-398.

61. **A stable algorithm for flat radial basis functions on a sphere** (B.F. and C. Piret), *SIAM J. Sci. Comp.* 30 (2007), 60-80.

62. **Locality properties of radial basis function expansion coefficients for equispaced interpolation** (B.F., N. Flyer, S. Hovde and C. Piret), *IMA Journal of Numerical Analysis* 28 (2008), 121-142.

63. **On choosing a radial basis function and a shape parameter when solving a convective PDE on a sphere** (B.F. and C. Piret), *Journal of Computational Physics*, 227 (2008), 2758-2780.

64. **Steady axisymmetric vortex flows with swirl and shear** (A.E. Elcrat, B.F., and K.G. Miller), *J. Fluid. Mech.* 613 (2008), 395-410.

65. **Numerical solutions to 2D Maxwell-Bloch equations** (J.Y. Xiong, M. Colice, F. Schlottau, K. Wagner, and B.F.), *Optical and Quantum Electronics*, 40 (2008), 447-453.

66. **Magnetic relaxation in the solar corona** (K. Miller, B.F., N. Flyer and B.C. Low), *The Astrophysical Journal* 690 (2009), 720-733.

67. **Comparisons between pseudospectral and radial basis function derivative approximations** (B.F., N. Flyer and J.M. Russell), *IMA Journal of Numerical Analysis* 30 (2010), 149-172.

68. **A finite difference method for free boundary problems,** *Journal of Computational and Applied Mathematics* 233 (2010), 2831-2840.

69. **Evolution of solitary waves in a two-pycnocline system** (M. Nitsche, P.D. Weidman, R. Grimshaw, M. Ghrist and BF), *J. Fluid. Mech.* 642 (2010), 235-277.

70. **Stabilization of RBF-generated finite difference methods for convective PDEs** (B.F. and E. Lehto), *Journal of Computational Physics* 230 (2011), 2270-2285.

71. **Stable computations with Gaussian radial basis functions** (B.F., E. Larsson and N. Flyer), *SIAM J. Sci. Comp.* 33 (2011), 869-892.

72. **Radial basis functions: Developments and applications to planetary scale flows** (N. Flyer and B.F.), *Computers and Fluids*, 46 (2011), 23-32.

73. **A numerical implementation of Fokas boundary integral approach: Laplace's equation on a polygonal domain** (B.F. and N. Flyer), *Proc. Royal Society Series A.* 467 (2011), 2983-3003.

74. **A numerical methodology for the Painlevé equations** (B.F. and J.A.C. Weideman), *Journal of Computational Physics* 230 (2011), 5957-5973.

75. **Two results concerning the stability of staggered multistep methods** (M. Ghrist and B.F.), *SIAM J. Num. Anal.* 50 (2012), 1849-1860.

76. **Painlevé IV with both parameters zero: A numerical study** (J.A. Reeger and B.F.), *Studies in Applied Math.* 130 (2013), 108-133.

77. **Stable calculation of Gaussian-based RBF-FD stencils** (B.F., E. Lehto and C. Powell), *Comp. Math. Applic.* 65 (2013), 627-637.

78. **Stable computation of differentiation matrices and scattered node stencils based on Gaussian radial basis functions** (E. Larsson, E. Lehto, A. Heryodono and B.F.), *SIAM J. Sci. Comp.* 35 (2013), A2096-A2119.

79. **A spectrally accurate numerical implementation of the Fokas transform method for Helmholtz-type PDEs** (C-I.R. Davis and B.F.), *Complex Variables and Elliptic Equations*, 59 (2014), 564-577.

80. **A computational exploration of the second Painlevé equation** (B.F. and J.A.C. Weideman), *Found. Comput. Math.* 14 (2014), 985-1016.

81. **Inverting nonlinear dimensionality reduction with scale-free radial basis interpolation** (N.D. Monnig, B.F. and F.G. Meyer), *Appl. Comput. Harm. Anal.* 37 (2014), 162-170.

82. **On spherical harmonics based numerical quadrature over the surface of a sphere** (B.F. and J.M. Martel), *Adv. Comput. Math.* 40 (2014), 1169-1184.

83. **Some observations regarding steady laminar flows past bluff bodies** (B.F. and A.R. Elcrat), *Phil. Trans. R. Soc. A.* 372: 20130353, (2014), http://dx.doi.org/10.1098/rsta.2013.0353

84. **Painlevé IV: A numerical study of the fundamental domain and beyond** (J.A. Reeger and B.F.), *Physica D.* 280-281 (2014), 1-13.

85. **Fast generation of 2-D node distributions for mesh-free PDE discretizations** (B.F. and N. Flyer), *Comp. Math. Applic.* 69 (2015), 531-544.

86. **Solving PDEs with radial basis functions** (B.F. and N. Flyer), *Acta Numerica*, 24 (2015), 215-258.

87. **Seismic modeling with radial-basis-function-generated finite differences** (B. Martin, B.F. and A. St-Cyr), *Geophysic*s. 80, No. 4 (2015), T137-T146.

88. **Stability ordinates of Adams predictor-corrector methods** (M. Ghrist, B.F. and J. Reeger), *BIT*, 55 (2015), 733-750.

89. **A computational overview of the solution space of the imaginary Painlevé II equation** (B.F. and J.A.C. Weideman) , *Physica D.* 309 (2015), 108-118.

90. **Numerical quadrature over the surface of a sphere** (J.A. Reeger and B.F.), *Studies in Applied Math.* 137 (2015), 174-188.

91. **On the role of polynomials in RBF-FD approximations: I. Interpolation and accuracy** (N. Flyer, B.F., V. Bayona and G.A. Barnett), *Journal of Computational Physics* 321 (2016), 21-38.

92. **Fast calculation of Laurent expansions for matrix inverses**, *Journal of Computational Physics*, 326 (2016), 722-732.

93. **Numerical quadrature over smooth, closed surfaces** (J.A. Reeger, B.F. and M.L. Watts), *Proc. Royal Soc. A.* 472 (2016), 20160401http://dx.doi.org/10.1098/rspa.2016.0401

94. **Stable computations with flat radial basis functions using vector-valued rational approximations** (G.B. Wright and B.F.), *Journal of Computational Physics*, 331 (2017), 137-156.

95. **On the role of polynomials in RBF-FD approximations: II. Numerical solution of elliptic PDEs** (V. Bayona, N. Flyer, B.F. and G. A. Barnett), *Journal of Computational Physics* 332 (2017), 257-273.

96. **Seismic modeling with radial basis function-generated finite differences (RBF-FD) – a simplified treatment of interfaces** (B. Martin and B.F.), *Journal of Computational Physics* 335 (2017), 828-845.

97. **Using radial basis function-generated finite differences (RBF-FD) to solve heat transfer equilibrium problems in domains with interfaces** (B. Martin and B.F.), *Engineering Analysis and Boundary Elements* 79 (2017), 38-48.

98. **Methods for the computation of the multivalued Painlevé transcendents on their Riemann surfaces** (M. Fasondini, B.F. and J.A.C. Weideman), *Journal of Computational Physics* 344 (2017), 36-50.

99. **A computational exploration of the McCoy-Tracy-Wu solutions of the third Painlevé equation** (M. Fasondini, B.F. and J.A.C. Weideman), *Physica D* 363 (2018), 18-43.

100. **Numerical quadrature over smooth surfaces with boundaries** (J.A. Reeger and B.F.), *Journal of Computational Physics* 355 (2018), 176-190.

101. **Dynamics of topological solitons, knotted streamlines, and transport of cargo in liquid crystals (**H.R.O. Sohn, P.J. Ackerman, T.J. Boyle, G.H. Sheetah, B.F. and I.I. Smalyukh), *Physical Review E* 97, 052701 (2018).

102. **Fast high-dimensional node generation with variable density** (O. Vlasiuk, T. Michaels, N. Flyer and B.F.), *Comp. Math. Applic.* 76 (2018), 1739-1757.

103. **On the Fokas method for the solution of elliptic problems in both convex and non-convex polygonal domains** (M. Colbrook, N. Flyer and B.F.), *Journal of Computational Physics* 374 (2018), 996-1016.

104. **An improved Gregory-like method for 1-D quadrature** (B.F. and J.A. Reeger), *Numerische Mathematik* 141 (2019), 1-19.

105. **On the role of polynomials in RBF-FD approximations: III. Behavior near domain boundaries** (V. Bayona, N. Flyer and B.F.), *Journal of Computational Physics* 380 (2019), 378-399.

106. **Explicit time stepping of PDEs with local refinement in space-time** (D. Abrahamsen and B.F.), *Journal of Scientific Computing* 81 (2019), 1945-1962.

107. **Transport schemes in spherical geometries using spline-based RBF-FD with polynomials** (D. Gunderman, N. Flyer and B.F.), *Journal of Computational Physics* 408 (2020), Article Nr: 109256.

108. **The radial basis functions method for improved numerical approximations of geological processes in heterogeneous systems** (C. Piret, N. Dissanayake, J.S. Gierke and B.F.), *Mathematical Geosciences*, 52 (2020), 477-497.

109. **Euler-Maclaurin expansions without analytic derivatives**, *Proc. Royal Soc. A.* Vol. 476 Article nr: 20200441 , doi.org/10.1098/rspa.2020.0441 (2020).

110. **Improving the accuracy of the trapezoidal rule**, *SIAM Review, Education Section.* 63 (1) (2021), 167-180.

111. **An algorithm for calculating Hermite-based finite difference weights**, *IMA J. Numerical Analysis.* 41 (2021), 801-813.

112. **Contour integrals of analytic functions given on a grid in the complex plane**, *IMA J. Numerical Analysis,* 41 (2021), 814-825.

113. **Generalizing the trapezoidal rule in the complex plane**, *Numerical Algorithms.* 87 (2021), 187-202.

114. **Fast variable density 3-D node generation** (K. van der Sande and B.F.), *SIAM J. Sci. Comput.*, 43 (1) (2021), A242-A257.

115. **Solving the Korteweg-de Vries equation with Hermite-based finite differences** (D. Abrahamsen and B.F.), A*pplied Mathematics and Computation*, 401 (2021), Article Nr. 126101.

116. **A parallel-in-time approach for wave-type PDEs** (A.C. Ellison and B.F.), *Numerische Mathematik*, 148 (1) (2021), 79-98, doi.org/10.1007/s00211-021-01197-5

117. **On the infinite order limit of Hermite-based finite difference schemes** (D. Abrahamsen and B.F.), *SIAM Journal on Numerical Analysis* 59, No 4 (2021), 1857-1874.

118. **Finite difference formulas in the complex plane**, *Numerical Algorithms*, 90 (2022), 1305-1326.

119. **Accelerating explicit time-stepping with spatially variable time steps through machine learning** (K. van der Sande, N. Flyer and B.F.), Submitted to *Journal of Scientific Computing* (2022).

120. **Fully numerical Laplace transform methods** (J.A.C. Weideman and B.F.), *Numerical Algorithms* (2022), https://doi.org/10.1007/s11075-022-01368-x.

121. **Infinite order accuracy limit of finite difference formulas in the complex plane**, Submitted to *IMA J. Num. Anal.* (2022).

CONFERENCE PROCEEDINGS and BOOK CHAPTERS

1. **Suggested architecture for a specialized fluid dynamics computer**, In Future computer requirements for computational aerodynamics, NASA Conference Publication 2032 (1978), 429-434.

2. **Pseudospectral calculations on 2-D turbulence and nonlinear waves**, SIAM-AMS Proceedings on Symposia in Applied Mathematics, 11 (1978), 1-18.

3. **Steady high Reynolds number flow past a cylinder**, Proceedings SCIE-meeting Lawrence Livermore (1979), 138-143.

4. **Vector computing and its application to some problems in fluid mechanics**, In Proceedings of the Canadian Information Processing Society annual meeting, Session 80, Victoria, Canada (1980), 43-55.

5. **Numerical computation of nonlinear waves**, In Nonlinear Phenomena in Physics and Biology, Plenum Publishing Corporation (1981), 157-184.

6. **Steady viscous flow past a circular cylinder**, Cyber 200 Applications seminar, NASA Conference Publication 2295 (1984), 199-224.

7. **The pseudospectral method: Comparisons with finite differences for the elastic wave equation**, Expanded Abstracts, 56th Annual International SEG Meeting, Houston (1986), 631-632.

8. **Steady viscous flow past a circular cylinder**, In Numerical methods for fluid dynamics II, Ed. K.W. Morton, M.J.Baines, Clarendon Press, Oxford (1986), 489-497.

9. **Steady viscous flow past a cylinder and a sphere at high Reynolds numbers**, In Boundary-layer Separation, Ed. F.T. Smith, S.N. Brown, Springer Verlag (1987), 3-17.

10. **Steady flow past blunt bodies at high velocities**, In Yearbook for 1987, The John von Neumann Center, Consortium for Scientific Computing, Princeton, (1987), 63-66.

11. **Pseudospectral approximation of the elastic wave equation on a staggered grid**, in Expanded Abstracts, 59th Annual International SEG Meeting, Dallas (1989), 1047-1049.

12. **Rapid generation of weights in finite difference formulas**, In Numerical analysis 1989, D.F. Griffiths and G.A. Watson Ed., Longman (1990), 105-121.

13. **High order finite differences and the pseudospectral method on staggered grids**, in Third International Conference on Hyperbolic Problems, Theory, Numerical Methods and Applications, B. Engquist and B. Gustafsson Eds., Studentlitteratur (1991), Vol. 1, 418-432.

14. **Fast generation of weights in finite difference formulas**, In Recent developments in numerical methods and software for ODEs/DAEs/PDEs, G.D. Byrne and W.E. Schiesser Ed., World Scientific Publishing Co., Inc. (1992), 97-123.

15. **Computing steady incompressible flows past blunt bodies - A historical overview**. In Numerical Methods for Fluid Dynamics IV (Ed. M.J. Baines and K.W. Morton), Oxford Univ. Press (1993), 115-134.

16. **A review of pseudospectral methods for solving partial differential equations** (B.F. and D.M. Sloan), Acta Numerica 1994, Ed. A. Iserles, Cambridge University Press (1994), 203-268.

17. **The prospect for parallel computing in the oil industry**, in Applied Parallel Computing (eds. Wasniewski, Dongarra, Madsen and Olesen), Springer Verlag Lecture Notes in Computer Science 1184 (1996), 262-271.

18. **Pseudospectral methods for large-scale bioacoustic models** (G. Wojcik, BF, R. Waag, L. Carcione, J. Mould, L. Nikodym and T. Driscoll), 1997 IEEE Ultrasonics Symposium Proceedings (1997).

19. **Use of the Berenger PML in pseudospectral methods for Maxwell's equations** (T.A. Driscoll and B.F.), ed. T.L. Gears, Proc. IUTAM Symposium 1997, 95-102.

20. **Steady vortex flows obtained from a nonlinear eigenvalue problem** (A. Elcrat, BF, K. Miller) Third International Workshop on Vortex Flows and Related Numerical Methods; ESAIM Proceedings, Vol. 7 (1999), 130-136.

21. **Some numerical techniques for Maxwell's equations in different types of geometries**. *Topics in Computational Wave Propagation*, Eds: M. Ainsworth, P.J. Davies, D.B. Duncan, P.A. Martin and B.P. Rynne, Lecture Notes in Computational Science and Engineering 31, Springer Verlag (2003), 265-299.

22. **Scattered node mehrstellenverfahren-type formulas generated from radial basis functions** (G.B. Wright and BF), in Computational Methods, G. Liu, V. Tan, and X. Han, eds., Springer Netherlands (2006), 1391-1395.

23. **Simulations of 2D Maxwell-Bloch equations** (JY Xiong, M. Colice, F. Schlottau, K. Wagner, and BF), in IEEE NUSOD'07 (Numerical Simulation of Optoelectronic Devices) (2007), 5-6.

24. **Matlab optimization of an IMPRINT model of human behavior** (W.D. Raymond, BF, C.J. Buck-Gengler, A. F. Healy and L.E. Bourne), In Proceedings of the Seventeenth Conference on Behavior Representation in Modeling and Simulation, Orlando, FL: Simulation Interoperability Standards Organization (2008), 26-34.

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