

# CURRICULUM VITAE

## Bengt Fornberg

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### PERSONAL DATA

Swedish citizen, holder of permanent US residency permit.

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### 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).  
1969 FK, FM (Corresponding to BS)

### EMPLOYMENT

1995 - Professor of Applied Mathematics, University of Colorado, Boulder  
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 Research, Geneva, Switzerland.  
1967 - 1972 Assistant, Departments of Mathematics and Computer Science, Uppsala University.

## 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.

## 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).

### 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. **On the chance of freak waves at sea** (B.S. White and B.F.), *Journal of Fluid Mechanics* 355 (1998), 113-138.
33. **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.
34. **Spatial finite difference approximations for wave-type equations** (B.F. and M. Ghrist), *SIAM J. Num. Anal.* 37 (1999), 105-130.
35. **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.
36. **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.
37. **Staggered time integrators for wave equations** (M. Ghrist, B.F. and T.A. Driscoll), *SIAM J. Num. Anal.* 38 (2000), 718-741.
38. **Note on nonsymmetric finite differences for Maxwell's equations** (T.A. Driscoll and B.F.), *Journal of Computational Physics*, 161 (2000), 723-727.
39. **Some steady axisymmetric vortex flows past a sphere** (A. Elcrat, B.F. and K. Miller), *Journal of Fluid Mechanics*, 433 (2001), 315-328.
40. **A Padé-based algorithm for overcoming Gibbs' phenomenon** (T.A. Driscoll and B.F.), *Numerical Algorithms* 26 (2001), 77-92.
41. **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.

42. **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.
43. **A numerical study of radial basis function based solution methods for elliptic PDEs** (E. Larsson and B.F.), *Computers and Mathematics with Applications*, 46 (2003), 891-902.
44. **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.
45. **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.
46. **On the nature of initial-boundary value solutions for dispersive equations** (N. Flyer and B.F.), *SIAM J. Appl. Math.*, 64 (2003), 546-564.
47. **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.
48. **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.
49. **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.
50. **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.
51. **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.
52. **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.
53. **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.
54. **Stability of vortices in equilibrium with a cylinder** (A. Elcrat, B.F., and K. Miller), *J. Fluid. Mech.* 544 (2005), 53-68.
55. **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.
56. **A new class of oscillatory radial basis functions** (B.F., E. Larsson and G. Wright), *Computers and Mathematics with Applications* 51 (2006), 1209-1222.
57. **A pseudospectral fictitious point method for high order initial-boundary value problems**, *SIAM J. Sci. Comp.* 28 (2006), 1716-1729.
58. **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.
59. **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.
60. **A stable algorithm for flat radial basis functions on a sphere** (B.F. and C. Piret), *SIAM J. Sci. Comp.* 30 (2007), 60-80.
61. **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.
62. **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.

63. **Steady axisymmetric vortex flows with swirl and shear** (A.E. Elcrat, B.F., and K.G. Miller), *J. Fluid. Mech.* 613 (2008), 395-410.
64. **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.
65. **Magnetic relaxation in the solar corona** (K. Miller, B.F., N. Flyer and B.C. Low), *The Astrophysical Journal* 690 (2009), 720-733.
66. **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.
67. **A finite difference method for free boundary problems**, *Journal of Computational and Applied Mathematics* 233 (2010), 2831-2840.
68. **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.
69. **Stabilization of RBF-generated finite difference methods for convective PDEs** (B.F. and E. Lehto), *Journal of Computational Physics* 230 (2011), 2270-2285.
70. **Stable computations with Gaussian radial basis functions** (B.F., E. Larsson and N. Flyer), *SIAM J. Sci. Comp.* 33 (2011), 869-892.
71. **Radial basis functions: Developments and applications to planetary scale flows** (N. Flyer and B.F.), *Computers and Fluids*, 46 (2011), 23-32.
72. **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.
73. **A numerical methodology for the Painlevé equations** (B.F. and J.A.C. Weideman), *Journal of Computational Physics* 230 (2011), 5957-5973.
74. **Two results concerning the stability of staggered multistep methods** (M. Ghrist and B.F.), *SIAM J. Num. Anal.* 50 (2012), 1849-1860.
75. **Painlevé IV with both parameters zero: A numerical study** (J.A. Reeger and B.F.), *Studies in Applied Math.* 130 (2013), 108-133.
76. **Stable calculations of Gaussian-based RBF-FD stencils** (B.F., E. Lehto and C. Powell), *Comp. Math. Applic.* 65 (2013), 627-637.
77. **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.
78. **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.
79. **A computational exploration of the second Painlevé equation** (B.F. and J.A.C. Weideman), *Found. Comput. Math.* 14 (2014), 985-1016.
80. **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.
81. **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.
82. **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>

83. **Painlevé IV: A numerical study of the fundamental domain and beyond** (J.A. Reeger and B.F.), *Physica D.* 280-281 (2014), 1-13.
84. **Fast generation of 2-D node distributions for mesh-free PDE discretizations** (B.F. and N. Flyer), *Comp. Math. Applic.* 69 (2015), 531-544.
85. **Solving PDEs with radial basis functions** (B.F. and N. Flyer), *Acta Numerica*, 24 (2015), 215-258.
86. **Seismic modeling with radial-basis-function-generated finite differences** (B. Martin, B.F. and A. St-Cyr), *Geophysics*. 80, No. 4 (2015), T137-T146.
87. **Stability ordinates of Adams predictor-corrector methods** (M. Ghrist, B.F. and J. Reeger), *BIT*, 55 (2015), 733-750.
88. **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.
89. **On the role of polynomials in RBF-FD approximations: I. Interpolation and accuracy** (N. Flyer, B.F., G.A. Barnett and V. Bayona), *Journal of Computational Physics* 321 (2016), 21-38.
90. **Numerical quadrature over the surface of a sphere** (J.A. Reeger and B.F.), *Studies in Applied Math.* 137 (2016), 174-188.
91. **Fast calculation of Laurent expansions for matrix inverses**, *Journal of Computational Physics*, 326 (2016),722-732.
92. **Numerical quadrature over smooth, closed surfaces** (J.A. Reeger, B.F. and M.L. Watts), To appear in *Proc. Royal Soc. A*.
93. **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), Submitted to *Journal of Computational Physics*.
94. **Seismic modeling with RBF-FD – a simplified treatment of interfaces** (B. Martin and B.F.), Submitted to *Journal of Computational Physics*.
95. **Using RBF-FD to solve heat transfer equilibrium problems in domains with interfaces** (B. Martin and B.F.), Submitted to *Engineering Analysis and Boundary Elements*.
96. **The unified transform: Laplace’s equation on non-convex polygonal domains** (N. Flyer and B.F.), Submitted to *Proc. Royal Soc. A*.
97. **Stable computations with flat radial basis functions using vector-valued rational approximations** (G.B. Wright and B.F.), Submitted to *Journal of Computational Physics*.

## 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. **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.
20. **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.
21. **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.
22. **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.
23. **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.
24. **Steady vortex flow past a cylinder or sphere** (A. Elcrat, K. Miller and B.F.), 5th conference on Frontiers in Applied and Computational Mathematics (FACM 08), World Scientific Publishing Company (2008).



25. **Padé-based interpretation and correction of the Gibbs phenomenon** (T.A. Driscoll and B.F.), in *The Gibbs Phenomenon in Various Representations and Applications*, ed. A. Jerri, Sampling Publishing, Potsdam, NY (2011), Chapter 5, 173-196.
26. **The Gibbs phenomenon for radial basis functions** (B.F. and N. Flyer), in *The Gibbs Phenomenon in Various Representations and Applications*, ed. A. Jerri, Sampling Publishing, Potsdam, NY (2011), Chapter 6, 197-219.
27. **Evaluation and comparison of models of human performance during training** (B.F., W.D. Raymond, C.J. Buck-Gengler, A.F. Healy, B. Best and L.E. Bourne, Jr.), in *Training Cognition*, ed. A.F. Healy and L.E. Bourne, Jr., Psychology Press, Taylor and Francis Group, New York (2012), Chapter 11, 225-246.
28. **Development of meshless computational algorithms for seismic exploration** (B. Martin, N. Flyer, B.F., A. St-Cyr), in *SEG Technical Program Expanded Abstracts 2013*, (2013), 3543-3547.
29. **Radial basis function-generated finite differences: A mesh-free method for computational geosciences** (N. Flyer, G.B. Wright and B.F.), in *Handbook of Geomathematics*, DOI 10.1007/978-3-642-27793-1\_61-1, Springer-Verlag (2014).
30. **Seismic modeling with radial basis function-generated finite differences (RBF-FD)** (B. Martin, B.F., A. St-Cyr, N. Flyer), in *SEG Technical Program Expanded Abstracts 2014*, (2014), 3546-3550.
31. **Differentiation: Computation** In *Encyclopedia of Applied and Computational Mathematics*, Springer Verlag (2015), 351-353.