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BIBLIOGRAPHY
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I. BOOKS

1. K. Atkinson, D. Chien, and O. Hansen. *Spectral Methods Using Multivariate Polynomials On The Unit Ball*, submitted for publication.

2. K. Atkinson and Weimin Han. *Spherical Harmonics and Approximations on the Unit Sphere : An Introduction*, Lecture Notes in Mathematics #2044, Springer-Verlag, New York, 2012.

3. K. Atkinson and Weimin Han. *Theoretical Numerical Analysis: A Functional Analysis Framework*, 3rd edition, Springer-Verlag, New York, 2009.

4. K. Atkinson, Weimin Han, and David Stewart. *The Numerical Solution of Ordinary Differential Equations*, John Wiley Pub., 2009.

5. K. Atkinson and Weimin Han. *Theoretical Numerical Analysis: A Functional Analysis Framework*, 2nd edition, Springer-Verlag, New York, 2005.

6. K. Atkinson and Weimin Han. *Elementary Numerical Analysis*, 3rd edition, John Wiley, New York, 2003. [There is a significant MATLAB software component to this edition.] A Chinese language edition was published in 2009.

7. K. Atkinson and Weimin Han. *Theoretical Numerical Analysis: A Functional Analysis Framework*, Springer-Verlag, New York, 2001.

8. *The Numerical Solution of Integral Equations of the Second Kind*, Cambridge University Press, 1997, 552 pages. This is both an update and a significant extension of the book in [16] below.

9. Second edition of *Elementary Numerical Analysis*, John Wiley, New York, 1993. A Korean language edition appeared in 1995.

10. David Chien and K. Atkinson. *Solutions Manual* (for the book in [9]), John Wiley & Sons, 1993. These are the complete worked solutions of all problems in the text, together with a discussion of the text material.

11. *An Introduction to Numerical Analysis*, 2nd edition, 1989, 693 pages. This was a very time-consuming rewrite of the earlier 1978 edition, given below in [14].

12. *Elementary Numerical Analysis*, John Wiley & Sons, 1984, 416 pages.

13. *Solutions Manual* (for the book in [12]), John Wiley & Sons, 1985, 238 pages. These are the complete worked solutions of all problems in the text, together with a discussion of the text material.

14. *An Introduction to Numerical Analysis*, John Wiley, New York, l978, 587 pages.

15. *Solutions Manual* (for book in [14]), John Wiley, New York, 1978. This is a general instructors guide of 217 pages, giving much more information than the usual solutions manual, including complete worked solutions to all problems.

16. *A Survey of Numerical Methods for the Solution of Fredholm Integral Equations of the Second Kind*, SIAM, Philadelphia, l976.

II. PAPERS

[In general, all papers given below have been refereed. Those in journals have been peer-refereed in the standard manner. Those in conference proceedings were refereed in various ways, dependent on the conference organizers' way of organizing the review process.]

1. K. Atkinson, David Chien, and O. Hansen. A spectral method for solving linear elliptic equations with a nonlinear Neumann boundary condition, *Numerical Algorithms* (2018), DOI=10.1007/s11075-018-0550-y, to appear.

2. K. Atkinson, David Chien, and O. Hansen. A spectral method for the biharmonic equation, in *Contemporary Computational Mathematics - A Celebration of the 80th Birthday of Ian Sloan* (J. Dick, F. Y. Kuo, H. Wózniakowski, eds.), Vol. 1, Springer-Verlag, 2018, pp. 97-118.

3. K. Atkinson, David Chien, and O. Hansen. A spectral method for nonlinear elliptic equations, *Numerical Algorithms* **74** (2017), pp. 797-819. DOI = 10.1007/s11075-016-0172-1. Also, available from http://arxiv.org/pdf/1405.2567.pdf.

4. K. Atkinson, David Chien, and O. Hansen. Evaluating polynomials over the unit disk and the unit ball, *Numerical Algorithms* **67** (2014), pp. 691-711, DOI=10.1007/s11075-013-9817-5.

5. K. Atkinson,O. Hansen, and D. Chien. A spectral method for parabolic differential equations, *Numerical Algorithms* **63** (2013), pp. 213-237, DOI=10.1007/s11075-012-9620-8.

6. W. Han, K. Atkinson, and H. Zheng. Some integral identities for spherical harmonics in an arbitrary dimension, *Journal of Mathematical Chemistry* **50** (2012), pp. 1126-1135.

7. K. Atkinson, and O. Hansen. Creating domain mappings, *Electronic Transactions on Numerical Analysis* **39** (2012), pp. 202-230.

8. K. Atkinson,O. Hansen, and D. Chien.A spectral method for elliptic equations: The Neumann problem, *Advances in Computational Mathematics* **34** (2011), pp. 295-317, DOI=10.1007/s10444-010-9154-3.

9. K. Atkinson, and O. Hansen. A spectral method for the eigenvalue problem for elliptic equations, *Electronic Transactions on Numerical Analysis* **37** (2010), pp. 386-412.

10. K. Atkinson, David Chien, and O. Hansen. A spectral method for elliptic equations: The Dirichlet problem, *Advances in Computational Mathematics,* **33** (2010), pp. 169-189, DOI=10.1007/s10444-009-9125-8.

11. O. Hansen, K. Atkinson, and David Chien. On the norm of the hyperinterpolation operator on the unit disk, *IMA J. Numerical Analysis*, **29** (2009), pp.257-283, DOI=10.1093/imanum/drm052.

12. K. Atkinson and L. Shampine. Algorithm 876: Solving Fredholm integral equations of the second kind in MATLAB, *ACM Trans. Math. Software*, **34** (2008), article #21 (20 pages), DOI=10.1145/1377596.1377601. See the accompanying software package at

    http://homepage.math.uiowa.edu/~atkinson/ftp/Fie.package/

    and on the website of *The MathWorks, Inc.*

13. K. Atkinson and David Chien. A study of the fast solution of the occluded radiosity equation, *Electronic Transactions on Numerical Analysis,* **23** (2006), pp. 219-250.

14. K. Atkinson and O. Hansen. Solving the nonlinear Poisson equation on the unit disk, *Journal of Integral Equations & Applications,* **17** (2005), pp. 223-241.

15. K. Atkinson and A. Sommariva. Quadrature over the sphere, *Electronic Transactions on Numerical Analysis*, **20** (2005), pp. 104-118.

16. J. Seol and K. Atkinson. Numerical evaluation of collocation integrals for the radiosity equation, *Applied Numerical Analysis and Computational Mathematics* **2** (2005), pp. 306-325.

17. K. Atkinson and A. Sommariva. On the numerical solution of some semilinear elliptic problems, *Computing*: *Archives for Scientific Computing* **74** (2005), pp. 159-175.

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19. Quadrature of singular integrands over surfaces, *Electronic Transactions on Numerical Analysis* **17** (2004), pp.133-150.

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28. Ian Sloan and K. Atkinson. Semi-discrete Galerkin approximations for the single-layer equation on Lipschitz curves, *Journal of Integral Eqns & Applics* **9** (1997), pp. 279-292.

29. David Chien and K. Atkinson. A discrete Galerkin method for a hypersingular boundary integral equation, *IMA J. of Numerical Analysis* **17** (1997), pp. 463-478.

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37. K. Atkinson and Ivan Graham. Iterative variants of the Nyström method for second kind boundary integral equations, *SIAM J. Scientific and Statistical Computing* **13** (1992), 694-722.

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39. K. Atkinson and Ian Sloan. The numerical solution of first kind logarithmic-kernel integral equations on smooth open arcs, *Math. of Computation* **56** (1991), 119-139.

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III. NON-RESEARCH ARTICLES

1. Numerical Analysis of Fredholm Integral Equations, in *Encyclopedia of Applied and Computational Mathematics*, Springer-Verlag, 2015, pp. 1047-1052.

2. A Personal Perspective on the History of the Numerical Analysis of Fredholm Integral Equations of the Second Kind, in *The Birth of Numerical Analysis*,edited by A. Bultheel and R. Cools, World Scientific Pub., 2009, pp. 53-72:

   http://homepage.math.uiowa.edu/~atkinson/ftp/IE_history.pdf

   For a group picture from the associated conference, see

   http://homepage.divms.uiowa.edu/~atkinson/talks/BirthNA_group.pdf

3. Numerical Analysis, in *Scholarpedia*,

   http://www.scholarpedia.org/article/Numerical_Analysis

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IV. TECHNICAL REPORTS

1. K. Atkinson, 'Modelling a road using spline interpolation', *Reports on Computational Maths* #145, Dept of Math, Univ of Iowa. This is a background paper for two conference papers written with Joe Kearney and Hongling Wang of the Computer Science Dept., given above in #20 and #21 under **PAPERS**. For an easy-to-use MATLAB package, go to http://www.math.uiowa.edu/~atkinson/ftp/roads-files/.

2. *User's Guide for a Boundary Element Program.* This accompanies a large boundary element code (written in *Fortran*) which implements many of my ideas from research of the past 35 years on the numerical solution of boundary integral equations in three dimensions. The code and guide is available from the Math Dept anonymous ftp web site or from the author's personal web site, at.

   http://homepage.math.uiowa.edu/~atkinson/laplace.html

   The first version was released in 1993, and a significant extension was released in early 1998, including a new *User's Guide*. The programs and guide, including Version #2, are available at the above URL. The revised user's guide is also available as *Reports on Computational Mathematics* #103 (1998).

3. Yan Chen and K. Atkinson, Solving a single layer integral equation on surfaces in $\mathbb{R}^3$, *Reports on Computational Maths* #51, Dept of Math, Univ of Iowa. Some of the material in this report has been presented in the book #8 given above.

4. An empirical study of the numerical solution of integral equations on surfaces in $\mathbb{R}^3$, *Reports on Computational Mathematics* #1 (1989), Dept of Mathematics, Univ. of Iowa, 49 pages.

5. SPHERE.TRI.PACK: A Spherical Triangulation Package. This Fortran package provides for the creation, refinement, and manipulation of triangulations on the unit sphere, with the triangulations based on inscribed regular polyhedra with triangular faces.

V. IN PREPARATION

1. K. Atkinson. Numerical approximation of particular solutions to the Poisson equation in two and three dimensions.

2. K. Atkinson. I am preparing a boundary integral equation package, in MATLAB, for solving planar problems for Laplace's equation. As preliminary work, see

   http://homepage.math.uiowa.edu/~atkinson/laplace.html

   and the links given there.

3. Numerical integration of singular functions over the unit disk.