I. BOOKS


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.]


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

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


28. K. Atkinson and Graeme Chandler. The collocation method for solving
the radiosity equation for unoccluded surfaces, *Journal of Integral Eqns

29. The numerical solution of boundary integral equations, in *The State of
the Art in Numerical Analysis*, ed. by I. Duff and G. Watson, Clarendon

30. Ian Sloan and K. Atkinson. Semi-discrete Galerkin approximations for
the single-layer equation on Lipschitz curves, *Journal of Integral Eqns

31. David Chien and K. Atkinson. A discrete Galerkin method for a hy-
ersingular boundary integral equation, *IMA J. of Numerical Analysis

32. Yajun Yang and K. Atkinson. Numerical integration for multivari-
able functions with point singularities, *SIAM J. Numerical Analysis

33. K. Atkinson and David Chien. Piecewise polynomial collocation for
pp. 651-681.

34. The numerical solution of a nonlinear boundary integral equation on

35. Two-grid iteration methods for linear integral equations of the second
kind on piecewise smooth surfaces in $\mathbb{R}^3$, *SIAM J. Scientific Computing

36. K. Atkinson and Ezio Venturino, Numerical evaluation of line integrals,

37. K. Atkinson and Jose Flores. The discrete collocation method for non-
195-213.

38. Ivan Graham and K. Atkinson. On the Sloan iteration applied to in-
tegral equations of the first kind, *IMA J. of Numerical Analysis **13**


51. Algorithm 629: An integral equation program for Laplace’s equation in three dimensions, *ACM Trans. on Math. Soft.* **11** (1985), 85-96. (This also contains 2400+ lines of code.)


63. Algorithm 503: An automatic program for Fredholm integral equations of the second kind, *ACM Trans. Math. Soft.* **2** (1976), 196-199. (This gives just the preliminary comments. The entire 30 pages of program listings is given in the *Collected Algorithms of the ACM*.)


III. NON-RESEARCH ARTICLES

1. Analyse numérique des équations intégrales, in *Techniques de l’Ingénieur.* (Numerical analysis of integral equations, in *Engineer’s Technical Editions.)*


For a group picture from the associated conference, see

http://homepage.divms.uiowa.edu/~atkinson/talks/BirthNA_group.pdf
4. Numerical Analysis, in *Scholarpedia*,
   http://www.scholarpedia.org/article/Numerical_Analysis


**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 #22 and #23 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.


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. Numerical approximation of particular solutions to the Poisson equation in two and three dimensions. See paper #52 above.

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

   \[ \text{http://homepage.math.uiowa.edu/~atkinson/laplace.html} \]

   and the links given there.

3. Calculating a conformal mapping using Symm’s integral equation. This is to include the mapping from the unit disk $\mathbb{B}^2$ onto a simply-connected region $\Omega$, along with its first derivatives. The paper #?? is another approach to this problem.