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.*


52. 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.)


64. 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 #23 and #24 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 #53 above.

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