



Call for Papers

Journal of Logic and Algebraic Programming special issue on Practical Development of Exact Real Number Computation

Deadline for submissions: December 31, 2002

Journal of Logic and Algebraic Programming
special issue on
Practical Development of Exact Real Number Computation

Aim and scope

Exact real number computation addresses the gap between the practice and theory of working with real numbers. On the practical side, floating point numbers with fixed precision (being a finite set...) dominate the daily use of real numbers on computers. On the theoretical side, models of computability and computational complexity in analysis have grown in parallel. We seek to close the gap by e.g.

- research on programming languages for non denumerable data sets
- algorithms of approximate nature but with unrestricted precision

Here 'unrestricted precision' denotes the possibility to achieve results with an arbitrary high precision, usually combined with a strict error analysis or with the use of interval methods.

The Journal of Logic and Algebraic Programming is an international journal whose aim is to publish original work in the areas of logical and algebraic methods and techniques for programming in its broadest sense. The Journal of Logic and Algebraic Programming complements Elsevier's Science of Computer Programming and Theoretical Computer Science by its focus on the foundations of logical, algebraic and categorical methods for programming. For more information, visit <http://www.elsevier.com/locate/jlap>.

This special issue covers the spectrum from theoretical results to concrete applications of exact real number computation, with an emphasis on programming languages and implementations.

Submissions are solicited on topics including, but not limited to:

- abstract models of computation for non denumerable sets
- programming languages for exact real arithmetic
- data structures for exact real numbers or for 'large' subsets of the reals
- algorithms for exact arithmetic on real numbers
- algorithms for approximate arithmetic or interval arithmetic, but with unrestricted precision
- complexity theory related to arithmetic on real numbers
- symbolic or algebraic computations on real numbers
- survey articles or case studies on the area

Instructions

We look for original, unpublished contributions of high quality that are not submitted elsewhere. All submissions will be evaluated on the usual criteria (like technical content, originality...), but also on how they "bridge the gap", i.e. having both theoretical aspects and practical experiments will be a bonus. Deadline for submissions is December 31, 2002. Authors will be notified of acceptance or rejection before May 1, 2003. We anticipate publication of the special issue about end of 2003. Authors are requested to submit their paper (in either Postscript or PDF) electronically to the [chief editor](#) indicated below. We encourage the use of the Elsevier style file with LaTeX (see <http://www.elsevier.com/locate/latex>).

In order to speed up the review process, authors are strongly encouraged to send (tentative) title and abstract to the chief editor as soon as available.

Guest editors

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