CASC 2005

The 8th International Workshop
on Computer Algebra in Scientific Computing
September 12-16 2005, Kalamata, Greece
`http://www.cargo.wlu.ca/casc2005`
`http://www14.in.tum.de/CASC`

The methods of Scientific Computing play an important role in research and engineering applications in the natural and the engineering sciences. The significance and impact of computer algebra methods and computer algebra systems for scientific computing has increased considerably in recent times. Nowadays, such general-purpose computer algebra systems as Maple, Magma, Mathematica, MuPAD, Singular, CoCoA and others enable their users to solve the following three important tasks within a uniform framework:

(a) symbolic manipulation
(b) numerical computation
(c) visualization

The ongoing development of such systems, including their integration and adaptation to modern software environments, puts them to the forefront in scientific computing and enables the practical solution of many complex applied problems in the domains of natural sciences and engineering.

The topics addressed in the workshop cover all the basic areas of scientific computing as they benefit from the application of computer algebra methods and software:

1. exact and approximate computation
2. numerical simulation using computer algebra systems
3. parallel symbolic-numeric computation
4. problem-solving environments
5. Internet accessible symbolic and numeric computation
6. symbolic-numeric methods for differential and differential-algebraic equations
7. algebraic methods in geometric modeling
8. algebraic methods for nonlinear polynomial equations and inequalities
9. symbolic and numerical computation in systems engineering and modeling
10. algorithmic and complexity considerations in computer algebra
11. computer algebra in industry
12. solving problems in the natural sciences
13. aspects of computer algebra programming languages
14. automatic reasoning in algebra and geometry
15. mathematical communication
16. complexity of algebraic problems

The workshop is intended to provide a forum for researchers and engineers in the fields of mathematics, computer science, numerical analysis, and industry, to interact and exchange ideas. An important goal of the workshop is to bring together all these specialists for the purpose of fostering progress on current questions and problems in advanced scientific computing.

General Chairs: V. P. Gerdt (Dubna), E. W. Mayr (Munich)

Conference Chairs: I. Z. Emiris (Athens), I. S. Kotsireas (Waterloo), M. N. Vrahatis (Patras)

Important Dates:

deadline for submissions: April 1, 2005
notification of acceptance: June 30, 2005
final version due: July 15, 2005

Conference Proceedings: Accepted papers will be published in the Springer-Verlag series Lecture Notes in Computer Science, LNCS, `http://www.springeronline.com/lncs`, and will be available at the conference.