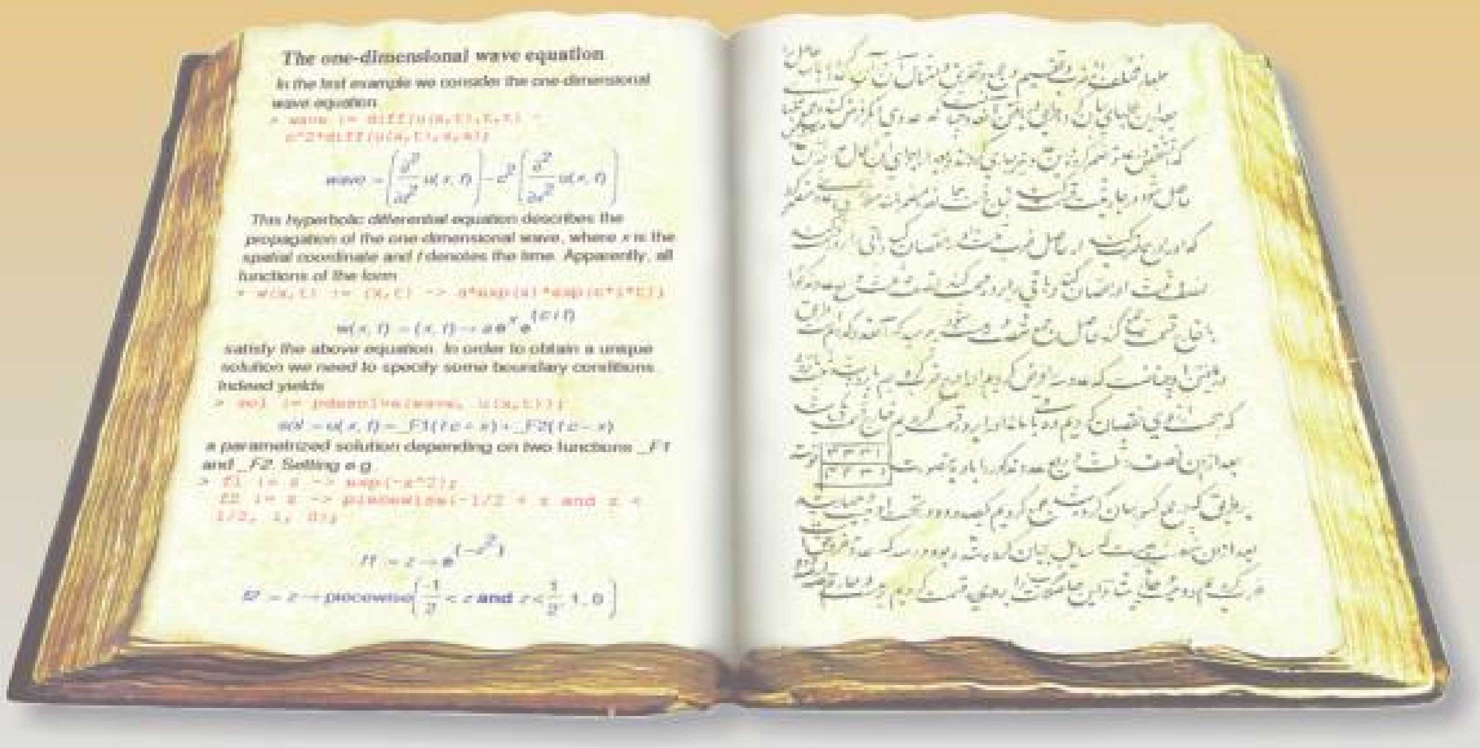
Computer Algebra in Scientific Computing



The one-dimensional wave equation

In the first example we consider the one-dimensional wave equation

This hyperbolic differential equation describes the propagation of the one-dimensional wave, where x is the spatial coordinate and t denotes the time. Apparently, all functions of the form

satisfy the above equation. In order to obtain a unique solution we need to specify some boundary conditions. Indeed yields

a parametrized solution depending on two functions _F1 and _F2. Setting e.g.

October 5 - 9, 2000
Samarkand State University
Samarkand, Uzbekistan

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2000

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Topics

- computer algebra and approximate computation
- numerical simulations using computer algebra systems
- parallel symbolic-numeric computation
- problem-solving environments
- symbolic-numeric interface
- Internet accessible symbolic and numeric computation
- construction of approximate solutions of ordinary differential equations and dynamical systems
- symbolic-numeric methods for differential-algebraic equations
- computer algebra analysis of partial differential equations
- algebraic methods for nonlinear polynomial equations and inequalities
- algorithmic and complexity considerations in computer algebra
- applications in natural sciences

Organization Committee

Workshop organizing committee:
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    Klaus Wimmer

Local organizing committee:
    Akhmadjon Soleev (chair)
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Important Dates

April 10, 2000: Submission of full papers

September 1, 2000: Registration deadline