Lecture Announcement

Numerical Algorithms for Differential Equations

Lecturer: Prof. Barbara Wohlmuth
Start: Monday, April 14, 2007
Time and Place:
- Lecture: V57, 7.122, Mon 8:00-9:30
- Tutorials: V61 (IWS), MultiMediaLab, Mon 15:45-17:15 (biweekly)
Course Web Site: [http://www.ians.uni-stuttgart.de/nmh](http://www.ians.uni-stuttgart.de/nmh) see “Teaching”.
Type of Course: 2L + 1T

Course Description:
In the first part of the semester, we will discuss algorithms for the numerical integration of ordinary differential equations (ODEs). In the second part, an introduction to partial differential equations (PDEs) and its solution by use of the Finite Element (FE) method will be given.

The lecture concentrates on the introduction of the required mathematical theory and on the development of the numerical algorithms. In the tutorial, special emphasis is placed on the implementation of the developed schemes with the MATLAB programming environment. Every four weeks (three times), an obligatory homework is given in the tutorials.

Credits:
Lecture + assignments/tutorials + final exam = 6 Credit Points (CP)

![Solution of restricted three-body problem ODE](image1)

![Solution of a PDE with mixed BC](image2)