FEMLAB: MATHEMATICAL MODELING AND VIRTUAL PROTOTYPING

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Abstract: FEMLAB is a general software package for modeling applied physics problems in MATLAB. FEMLAB is built around a set of powerful PDE solvers, and its equation based design makes it ideal for modeling in many different engineering fields, such as Structural Mechanics, Fluid Dynamics, Electromagnetics, Chemical Engineering. Specifically, FEMLAB supports the integration of problems from different fields - multiphysics - and integration with dynamical systems through SIMULINK.

FEMLAB 2.1 includes:

- CAD-like geometry modeling tools
- 3D Meshing capabilities
- Finite Element Solvers for nonlinear, dynamic and eigenvalue problems
- Post processing tools, including animations
- Complete integration with the MATLAB platform, C, FORTRAN, and JAVA
- Physics-to-code: save your models as MATLAB m-files for parametric studies
- The Structural Mechanics Module
- The Electromagnetics Module
- The Chemical Engineering Module
- Model Library with 100 solved and documented models

During the autumn of 2001 we will introduce the Version 2.2 of FEMLAB, and this seminar will focus on models taking advantage of the new features in FEMLAB 2.2

News in FEMLAB 2.2:

0D, 1D, 2D, and 3D geometries coupled in the same model
Element library with higher-order equation based elements and new solvers
IGES import (3D CAD)
New visualization functionality
Electromagnetics Module in 3D