Special Radon Semester 2005

Manfred Liebmann
Institute for Mathematics and Scientific Computing
University of Graz
manfred.liebmann@uni-graz.at

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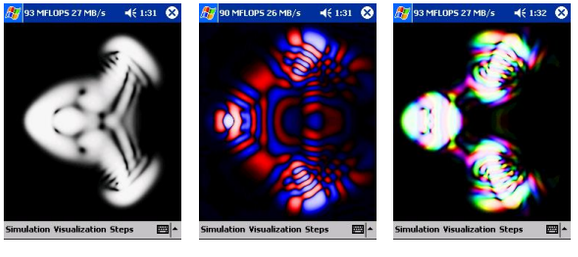
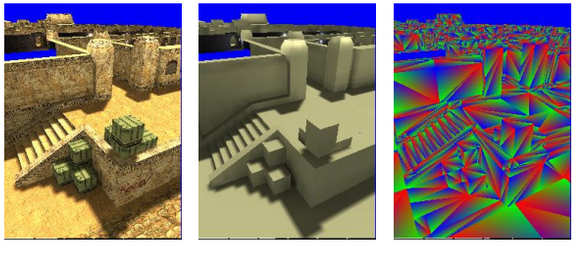
Scientific Interest

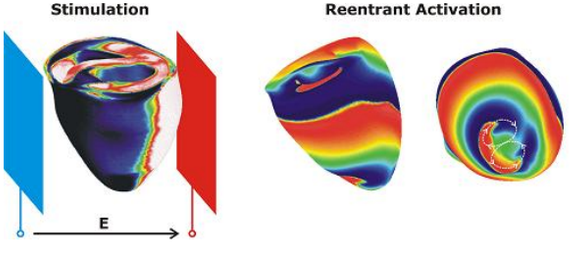
- Numerics of Partial Differential Equations
  - Fractal Approximation Schemes for Time Dependent PDEs
  - Applications in Quantum Physics (Schrödinger, Pauli, Dirac Equation)
  - Software for 'Visual Quantum Mechanics' Project with B. Thaller
- Numerics and Visualization on Mobile Devices
  - PDE Solvers on Mobile Devices (PDAs and Mobile Phones)
  - Development of High Performance 3D Graphics Library

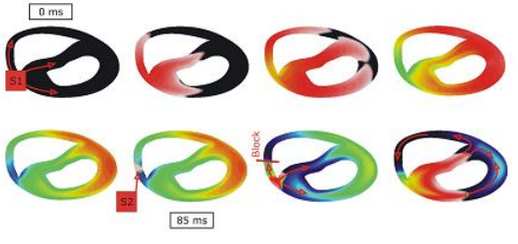




Scientific Interest

- Algebraic Multigrid Solver 'Pebbles' (PhD Thesis with G. Haase)
  - Object Oriented Design with Hardware Optimizations
  - Applications in Medical Sciences (Heart Model with G. Plank)
  - Parallelization and Grid Computing (Austrian Grid Project)





- Quantum Theory
  - Foundations of Quantum Theory
  - Quantum Information Theory and Quantum Control

Benefits and Collaboration

- Benefits
  - Intense working environment at RICAM
  - Wide variety of lectures and workshops
- Collaboration : H-Matrix Techniques
  - Wolfgang Hackbusch
  - Lars Grasedyck
  - Steffen Börm
- Collaboration : Numerical Simulation of Electromechanical Systems
  - Manfred Kaltenbacher