

MULTISCALE ANALYSIS FOR QUANTUM SYSTEMS AND  
APPLICATIONS  
ROMA, OCTOBER 24 - 26, 2007

PROGRAMME

WEDNESDAY, OCTOBER 24

**First session - Room INdAM.**

- 13.45 - 14.15: Registration
- 14.15 - 14.30: Welcome
- Short Communications
  - 14.30 - 15.00: **D. Finco**, *Quantum graphs and quantum waveguides with Dirichlet boundary conditions.*
  - 15.00 - 15.30: **J. Wachsmuth**, *Effective dynamics for constrained quantum systems.*
  - 15.30 - 16.00: **V. Pierfelice**, *Global wellposedness and scattering results for nonlinear Schrödinger equations on hyperbolic spaces.*
  - 16.00 - 16.30: **A. Mantile**, *On the optimization of the fundamental eigenvalue of confining point interaction operators.*
- 16.30 - 17.00: Coffee Break

**Second session - Room II, Dipartimento di Matematica.**

- Short Communications
  - 17.00 - 17.30: **L. Tenuta**, *Quasi-static limits in Nonrelativistic Quantum Electrodynamics.*
  - 17.30 - 18.00: **L. Fanelli**, *Dispersion of the magnetic Dirac flow.*
  - 18.00 - 18.30: **R. Bertelle**, *A quasi-variational inequality model for semiconductor simulation.*
  - 18.30 - 19.00: **R. Carlone**, *TBA.*

## THURSDAY, OCTOBER 25

**"Giornata INdAM" - Room INdAM**

- 9.00 - 9.15: Introduction to "Giornata INdAM"
  - 9.15 - 10.15: **C. Le Bris**, *Some mathematical and algorithmic aspects of computational materials science.*
  - 10.15 - 10.45: Coffee Break
  - 10.45 - 11.45: **R. Resta**, *The insulating state of matter: a geometrical theory.*
  - 11.45 - 12.45: **A. Gnudi**, *Numerical simulation of ballistic quantum transport in silicon nanowires accounting for full band effects.*
  - 12.45 - 14.30: Lunch
  - 14.30 - 15.30: **A. Ghetti**, *Electron and hole inversion layer mobility: theory and simulation.*
  - 15.30 - 16.00: Coffee Break
  - 16.00 - 17.00: **R. Schrader**, *Physics and mathematics of metric graphs.*
- 17.00 - 19.00: Informal discussion - Aula Picone, Dip. Matematica  
 Social dinner - meeting point: Piazzale Aldo Moro at 19.30 (sharp)

## FRIDAY, OCTOBER 26

**Morning session - Room INdAM.**

- 9.00 - 10.00: **S. Pascazio**, *Statistical mechanics of multipartite entanglement.* - Room INdAM
- 10.00 - 10.30: Coffee Break
- Short Communications - Room INdAM
  - 10.30 - 11.00: **R. Adami**, *Computation of quantum decoherence.*
  - 11.00 - 11.30: **C. Cacciapuoti**, *One dimensional approximations of the Laplacian on thin waveguides.*
  - 11.30 - 12.00: **C. Manzini**, *Fluid-dynamical models for quantum-driven semiconductor transport in high-field regime.*
- 12.10 - 13.00: Conclusione del progetto: rendiconto e discussione.