

# Geometric Numerical Integration

Program for Monday, March 20

09:00 – 09:45	Ben Leimkuhler Geometric integrators for thermostatted molecular dynamics
	Coffee
10:15 – 10:40	Ilan Degani The discrete variable representation of quantum mechanical Hamiltonians
10:45 – 11:10	Erwan Faou Analytic Estimates for splitting methods applied to the linear Schrödinger equation
	Coffee
11:30 – 12:15	Chris Budd Parabolic Monge-Ampère methods for grid generation
	Lunch
16:00 – 16:45	Tudor Ratiu Nonabelian semidirect product orbits and their relation to integrable systems
	Coffee
17:15 – 17:40	Debra Lewis Doing what comes naturally: Learning optimal control from the experts
17:45 – 18:10	Melvin Leok Lie group variational integrators and their application to geometric control

# Geometric Numerical Integration

Program for Tuesday, March 21

09:00 – 09:45	Sebastian Reich <b>Semi-implicit semi-Lagrangian methods for numerical weather prediction</b>
	Coffee
10:15 – 10:40	Marcel Oliver Parcel Eulerian-Lagrangian fluid dynamics
10:45 – 11:10	Brynjulf Owren Some properties of exponential integrators for nonlinear wave equations
	Coffee
11:30 – 12:15	Assyr Abdulle Numerical methods for multiscale problems
	Lunch
16:00 – 16:45	Moody Chu Structure preserving isospectral flows for quadratic pencils
	Coffee
17:15 – 17:40	Philippe Chartier <b>Volume preserving integrators</b>
17:45 – 18:10	Reinout Quispel Integral preserving integrators

# Geometric Numerical Integration

Program for Wednesday, March 22

09:00 – 09:45	Sergio Blanes Splitting methods in geometric integration
	Coffee
10:15 – 10:40	Ander Murua Splitting methods for the harmonic oscillator
10:45 – 11:10	Laurent Jay Geometric numerical integration of DAEs based on Gauss coefficients
	Coffee
11:30 – 12:15	Antonella Zanna Splitting methods of divergence-free polynomial vector fields
	Lunch
	Excursion

# Geometric Numerical Integration

Program for Thursday, March 23

09:00 – 09:25	Zaijiu Shang Stability of symplectic integrators
09:30 – 09:55	Simon Malham <b>Efficient strong methods for linear stochastic systems</b>
	Coffee
10:30 – 10:55	Elena Celledoni <b>Semi-Lagrangian methods and new integrators for convection dominated problems</b>
11:00 – 11:25	Begona Cano Conseverd quantities for some Hamiltonian wave equations after full discretization
	Lunch
16:00 – 16:45	Yuri Suris <b>Euler-Poincare integrators: variational construction and integrability</b>
	Coffee
17:15 – 17:40	Francesco Fassò Rigid body stability (and numerical integration)
17:45 – 18:10	Anthony Bloch Geodesic flows on manifolds and their discretization

# Geometric Numerical Integration

Program for Friday, March 24

09:00 – 09:25	Volker Grimm Exponential integrators for highly oscillatory differential equations
09:30 – 09:55	David Cohen Highly oscillatory Hamiltonian problems
	Coffee
10:30 – 10:55	Katina Lorenz Adiabatic integrators for highly oscillatory differential equations
11:00 – 11:25	Syvert Nørsett Highly oscillatory quadrature in one dimension
	Coffee
11:40 – 12:25	Arieh Iserles Quadrature of highly oscillatory multivariate integrals
	Lunch
13:45 – 14:30	Robert McLachlan Integration and application of the Euler equations for diffeomorphisms
	Coffee