



McMaster University



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## THE FIELDS INSTITUTE FOR RESEARCH IN MATHEMATICAL SCIENCES

### GEOMETRIC MECHANICS SEMINARS

#### SPEAKER:

**ROBERT McLACHLAN**  
Program in Applied Mathematics,  
University of Colorado at Boulder

#### On the Topic:

#### "Lie-Poisson Integration"

Many Hamiltonian systems are not in canonical form but are most naturally written as Lie-Poisson systems, which generally arise as reductions from canonical formulations in more variables. If we want to get the same advantages for these systems as symplectic integrators have provided for canonical ones, we need simple, fast, Lie-Poisson integrators which preserve all the Casimir integrals of the equations. The talk describes a wide class of systems for which simple, explicit methods are available, with applications to the rigid body and to the 2D Euler equations.

**Tuesday, May 18, 1993**

**3:30 pm, room 3018**

**at**

**The Fields Institute**

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