



McMaster University



University of Toronto



University of Waterloo

**THE FIELDS INSTITUTE  
FOR RESEARCH IN MATHEMATICAL SCIENCES**

**SEMINAR SERIES ON CONTROL THEORY**

**SPEAKER: MIKE ENOS**

There will be a series of four seminars on the topic

**The Time-Optimal Problem for a Force-Free System  
of Two Symmetric Rigid Bodies in Three Space**

Wednesdays, beginning

**Wednesday, October 16, 1991 at 3:30 p.m.**

in

**Davis Centre 2577  
University of Waterloo**

We consider the motions of a system of two rigid bodies which are constrained to rotate with opposite angular velocities. We show that this system is controllable and treat the problem of finding a piecewise-smooth motion transferring it between given positions in the least time when the angular velocities are bounded in magnitude by 1.

The topic for the first talk will be the Euler-Rodriguez quaternions and their use in control problems on the rotation group. **This talk will be held jointly with the Pure Mathematics Department Algebra Seminar.**