Title: A Class of Rendezvous Controllers for Underactuated Thrust-Propelled Rigid Bodies
Speaker: Ashton Roza, University of Toronto
Abstract: A framework is presented for rendezvous in a network of n underactuated thrust-propelled rigid bodies. A nested loop control structure is proposed whereby an outer loop consensus controller for a double integrator system provides reference signals to an inner loop thrust direction stabilizer. Both outer loop and inner loop controllers can be chosen from a wealth of solutions available in the literature, and it is shown that their combination solves the rendezvous problem almost globally for the rigid body network. We illustrate the theory by combining sample feedbacks, and we show robustness to noise by means of numerical simulations.