



SEMINAR ANNOUNCEMENT

TITLE: Monte Carlo/Deterministic Methods for Deep-Penetration Problems

PRESENTED BY: Troy Becker, University of Michigan

DATE: Thursday, July 10, 2008

TIME: 1:00 PM

LOCATION: Bldg. 5700, Room O304

Three hybrid Monte Carlo/deterministic techniques are presented for simulating global neutral-particle transport problems in which the particle flux varies by many orders of magnitude and estimates of the flux or some quantity of interest (e.g., reaction rates) are desired at all physical location in the system. These techniques have two steps: first, a computationally inexpensive deterministic global estimate of the particle flux (and/or adjoint flux) is obtained; then, Monte Carlo is used to simulate the problem to obtain the particle flux (or some reaction rate) by utilizing the deterministic estimate in some advantageous manner. Specifically, these techniques allow one to obtain statistically meaningful results in the “deep” region of the problem by distributing Monte Carlo particles more uniformly throughout the system.