DEPARTMENT OF MATHEMATICAL SCIENCES

Seminar on Numerical Methods

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Coarse-graining Langevin Dynamics

ABSTRACT: Langevin dynamics models arise from a wide variety of problems, especially where a mechanical system is subject to random forces that can be modeled by white noise. In this talk, I will present a derivation of a coarse-grained description, in the form of a generalized Langevin equation, from the Langevin dynamics model that describes the dynamics of bio-molecules. To facilitate the construction and implementation of the reduced models, the problem is then formulated as a reduced-order modeling problem. The reduced models can then be directly obtained from a Galerkin projection to appropriately defined Krylov subspaces.

Thursday, November 21, 2019
11:00AM-12:00PM
Stratton Hall Room 203