

STATISTICS DEPARTMENT



SEMINAR

TITLE: **EQUI-ENERGY SAMPLER: FROM STATISTICAL INFERENCE TO STATISTICAL MECHANICS**

SPEAKER: Samuel Kou
Harvard University



TIME: 4:00 P.M.

DATE: Wednesday, October 31, 2007

ROOM: 140 BARDEEN

ABSTRACT:

We introduce a new sampling algorithm, the equi-energy sampler, for efficient statistical sampling and estimation. Complementary to the widely used temperature-domain methods, the equi-energy sampler, utilizing the temperature-energy duality, targets the energy directly. The focus on the energy function not only facilitates efficient sampling, but also provides a powerful means for statistical estimation, for example, the calculation of the density of states and microcanonical averages in statistical mechanics. The equi-energy sampler is applied to a variety of problems, including exponential regression in statistics, motif sampling in computational biology, and protein folding in biophysics.

This work is joint with Qing Zhou and Wing Wong.

Coffee and Cookies at 3:30 p.m. in Room 1210 MSC

