



Department of Automatic Control & Systems Engineering  
would like to announce the following seminar:

## **Sequentially Interacting Markov Chain Monte Carlo for Bayesian Computation**

***Speaker: Prof Arnaud Doucet***

**Departments of Computer Science and Statistics,  
University of British Columbia  
Vancouver, Canada**

**Friday 9<sup>th</sup> December 2005  
at 14:10**

**Location: St Georges Mappin Building LT2**

Coffee and Biscuits will be served afterwards.

### **ABSTRACT**

We introduce a methodology to sample from a sequence of probability distributions and estimate their unknown normalizing constants. This problem is traditionally addressed using Sequential Monte Carlo (SMC) methods which rely on importance sampling/resampling ideas. We design here an alternative iterative algorithm. This algorithm is based on a sequence of interacting Markov chain Monte Carlo (MCMC) algorithms. We establish the convergence of this non-Markovian algorithm and demonstrate this methodology on various examples arising in Bayesian analysis of time series including for nonlinear non-Gaussian state-space models.