



Computer Models, Spatial Statistics, and the West Antarctic Ice Sheet

Predicting the future behavior of the West Antarctic ice sheet involves the use of computer models of ice sheet dynamics as well as ice sheet observational data. It is challenging to develop statistical methods for such data because both the data and the computer model output are in the form of binary spatial fields. I will describe an approach that combines Gaussian processes, generalized linear models, and dimension-reduction approaches for spatial data. This approach allows for efficient Markov chain Monte Carlo-based Bayesian inference. This is joint work with Won Chang (U. of Cincinnati), Yawen Guan (Penn State), Patrick Applegate and David Pollard (Penn State).