

Department of Applied Computational Mathematics and Statistics Colloquium

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will give a lecture entitled:

Generalized Fiducial Inference for Normal and Logistic Linear Mixed Models

Abstract

In many statistical problems, our interest lies in understanding some aspect of the parameter space. Generalized fiducial inference provides a methodology for transferring a distribution from the model space to the parameter space for purposes of inference. An inferential distribution is prescribed for the set-valued solution of the inverse of the data-generating equation. This generalized fiducial distribution on the parameter space has flexibility similar to a posterior distribution in Bayesian methods. Generalized fiducial inference is a computationally-based mode of inference, and we develop sequential Monte Carlo algorithms to obtain samples from the generalized fiducial distribution of the unknown parameters for normal and logistic mixed linear models.

Generalized fiducial inference has its roots in generalized inference and fiducial inference. Fiducial inference was introduced by R. A. Fisher in 1930 to overcome what he perceived as a deficiency in Bayesian methodology – when a prior distribution is assumed without sufficient prior information. There have been several attempts over the subsequent decades to both develop and discredit Fisher’s proposal. I will briefly touch upon some of the historical aspects of generalized fiducial inference.



**Monday, December 3, 2012
4:00 p.m. to 5:00 p.m.
127 Hayes-Healy Center**