



## SCMS Statistics Seminars

**Title:** Chernoff Index for Cox Test of Separate Parametric Families

**Speaker:** Professor Jingchen Liu

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**Time:** November 8, 2013 (Friday) 9:30 am - 11:30 am

**Location:** Room 2201, Guanghai East Tower

**Abstract:** The asymptotic efficiency of a generalized likelihood ratio test proposed by Cox is studied under the large deviations framework for error probabilities developed by Chernoff. In particular, two separate parametric families of hypotheses are considered (Cox, 1961, 1962). The significance level is set such that the maximal type I and type II error probabilities for the generalized likelihood ratio test decay exponentially fast with the same rate. We derive the analytic form of such a rate that is also known as the Chernoff index (Chernoff, 1952), a relative efficiency measure when there is no preference between the null and the alternative hypotheses. Further discussions are provided concerning the implications of the present result on the Bayesian model selection and its extensions when there are more than two families of distributions.

This seminar series is coorganized by Department of Statistics and Institute of Biostatistics, Fudan University.