

数学与系统科学研究院
计算数学所网络学术报告

报告人: 朱圣鑫 副教授

(*Research Center for Mathematics, Advanced Institute for Natural
Science, Beijing Normal University, China*)

报告题目:

**Fast Log Determinant Solvers for
Large Scale Co-Variance Matrices**

邀请人: 白中治 研究员

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Abstract:

Log determinants of covariance matrices plays an essential role in high dimensional Gaussian process, Bayesian inference, uncertainty quantification and mixed-effects models. It is necessary to calculate several inference criteria including the log likelihood; and the log determinants can also be required to be computed in indeterminate steps in the maximum likelihood estimation process. A fast and scalable log determinant solver is essential to make the maximum likelihood based methods feasible for high dimensional problems with many parameters. In this talk we shall introduce and compare four methods to calculate the log determinant of a symmetric positive definite matrix, in particular, we stress the promising way of multi-frontal direct solvers with fill-in ordering algorithms for compacted covariance functions.

欢迎大家参加！