

数学与系统科学研究院

计算数学所学术报告

报告人: **Chao Ma**

(*Princeton University*)

报告题目:

A-priori estimates of population risks for neural networks models

邀请人: 刘歆 副研究员

报告时间: 2019 年 7 月 25 日 (周四)

上午 10:00~11:00

报告地点: 科技综合楼三层

311 报告厅

Abstract:

Optimal a priori estimates are derived for the generalization error of regularized two-layer network and deep residual network models. For two-layer neural networks, the path norm is used as the regularization term. For residual networks, we define and use the "weighted path norm", which treats the skip connections and the nonlinearities differently so that paths with more nonlinearities are regularized by larger weights.

The error estimates are a priori in the sense that the estimates depend only on the target function, not on the parameters obtained in the training process. The estimates are optimal, in a high dimensional setting, in the sense that both the bounds for approximation and estimation errors are comparable to the Monte Carlo error rates. Comparisons are made with existing norm-based generalization error bounds.

欢迎大家参加！