

数学与系统科学研究院

计算数学所学术报告

报告人: Qingna Li

( *School of Mathematics and Statistics, Beijing Institute of  
Technology* )

报告题目:

**Nonmetric Multidimensional Scaling:  
Feasibility, Algorithms and  
Applications**

邀请人: 刘亚锋 副研究员

报告时间: 2020 年 11 月 18 日 (周三)

下午 16:00-17:00

报告地点: 科技综合楼

311 教室

## **Abstract:**

**Nonmetric multidimensional scaling(NMDS) is an important tool in data science to deal with dissimilarity data. In this talk, we will discuss the feasibility, numerical algorithms and the applications of NMDS, mainly based on the rank constraint Euclidean distance matrix model for NMDS. Despite the long history of NMDS, the feasibility issue of NMDS has been rarely discussed, which motivates us to take a systematical investigation of it. The challenges of designing efficient numerical algorithms for NMDS are the nonconvex constraint as well as the huge number of ordinal constraints. We will also discuss several numerical algorithms for NMDS, trying to tackling the two challenges in different ways. For applications, besides the traditional application such as sensor network localization, protein molecular conformation, we will also apply NMDS model to image ranking and posture sensing.**

**欢迎大家参加！**