# 数学与系统科学研究院

## 计算数学所学术报告

**报告人**：　戚厚铎 教授

（ 英国南安普顿大学 ）

**报告题目**：

**Locally Linear Embedding for Metric Dissimilarities**

**邀请人**：　戴彧虹 研究员

**报告时间**：2016 年 10 月 11 日（周二）

下午 **16:30-17:30**

**报告地点**：　科技综合楼三层

**311** 报告厅

# Abstract:

Locally linear embedding (widely known as LLE) is one of the top dimensionality reduction methods by Roweis and Saul (Science, 2000). LLE has since been widely used in many fields, mainly representing high dimensional data a lowe-dimensional manifold, where data can be more efficiently investigated. Its input can take one of the two forms: the coordinate matrix data or the pairwise Euclidean distance matrix of data. This talk aims to address one particular issue where the input data has noises or even has missing values. We refer to this type of input data as metric dissimilarities. The purpose of this talk is to report a new variant of LLE for metric dissimilarities. The key step is to replace the dissimilarities by its nearest Euclidean distance matrix, but at a local level. This step is achieved by a fast semismooth Newton-CG method. We prove the new variant will reduce to the original LLE when the input is taken to be one of the original forms.

# 欢迎大家参加!