



深圳北理莫斯科大学

УНИВЕРСИТЕТ МГУ-ППИ В ШЭНЬЧЖЭНЕ

SHENZHEN MSU-BIT UNIVERSITY

应用数学讲座

Научный Семинар по Прикладной Математике

Research Seminar on Applied Mathematics

Руководитель: Доцент Чжан Е

主持人: 张晔 (副教授, 深圳北理莫斯科大学)

(大数据/统计学) 报告 (三)

报告人 / Докладчик / Speaker:

Assistant Prof. Zhigang Yao, Department of Statistics and Applied Probability,
National University of Singapore, Singapore.

题目 / Название / Title:

“Principal Sub-manifolds and Classification on Manifolds”

时间 / Время / Time:

2019 年 11 月 14 日, 下午 6 点半至 8 点 / 14 Nov. 2019, 18:30-20:00 p.m.

地点 / Место / Venue: 1 教 113/ Building 1, Room 113

摘要 / Аннотация / Abstract:

We will discuss the problem of finding principal components to the multivariate datasets, that lie on an embedded nonlinear Riemannian manifold within the higher-dimensional space. Our aim is to extend the geometric interpretation of PCA, while being able to capture the non-geodesic form of variation in the data. We introduce the concept of a principal sub-manifold, a manifold passing through the center of the data, and at any point of the manifold, it moves in the direction of the highest curvature in the space spanned by the eigenvectors of the local tangent space PCA. We show the principal sub-manifold yields the usual principal components in Euclidean space. We illustrate how to find, use and interpret the principal sub-manifold, with which a classification boundary can be defined for data sets on manifolds.

访问学者以及需要做报告的学者请联系 张晔 副教授 / Всем желающим выступить с докладами на семинаре просьба обращаться к Чжану Е ye.zhang@smbu.edu.cn