



## 复旦大学数学科学学院 数学综合报告会

报告题目: **A Convolutional Neural Network-Based Screening Tool for X-ray Serial Crystallography**

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报告时间: 2017-11-22 星期三 9:30-10:30

报告地点: 光华东主楼 1513

摘要: I will introduce a new tool for screening macromolecular X-ray crystallography diffraction images produced at an X-ray free-electron laser light source. Based on a data-driven deep learning approach, the proposed tool executes a convolutional neural network to detect the presence of Bragg spots. Automatic image screening can be performed under realistic conditions consisting of noisy data with experimental artifacts, permitting the classification of large data sets. The accuracy of CNN classification depends largely on the quality of the annotated data used to train the network. I will describe the process used to annotate a variety of experimental images collected at the LCLS and discuss a number of issues one may face in using machine learning tools to analyze scientific experimental data.

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