SPeCial4Young

# SYSU-PKU Collider physics forum For Young scientists

# 中山-北大联合高能物理青年论坛第九期

自希格斯玻色子发现后，标准模型预言的粒子都已被找到。然而近些年来，在实验中发现越来越多与标准模型不符合的迹象，例如中微子质量、轻子味道普适性破坏以及CDF实验测量W玻色子质量反常等问题。这些“乌云”催促我们去寻找标准模型之外的新物理。高能物理界提出了各种不同的未来实验项目，例如基于LHC对撞机的升级计划（HL-LHC、HE-LHC）、未来环形对撞机（FCC、SPPC）、国际直线对撞机（ILC）、紧凑型直线对撞机（CLIC）、环形正负电子对撞机（CEPC）、缪子对撞机（MuC）、电子-缪子乃至电子-中微子对撞机等。

本论坛目的在于为高能物理工作者提供平台交流其在高能物理前沿的进展与经验，包括但不限于对撞机技术、软件模拟、物理分析等，同时也为高年级本科生及研究生提供接触高能物理前沿的机会。

**报告题目：** Di-b-jet as a probe for new physics and phase-2 upgrade of the ATLAS pixel detector

ATLAS实验上用双b喷注寻找新物理以及像素探测器的二期升级

**摘要：** Since the discovery of the Higgs boson in 2012, it has probed deeper to understand the nature of particle interactions and to discover what might be beyond the Standard Model (BSM). One of the most promising avenues to discovery is looking into interactions involving 3rd generation quarks. In this talk, I will present the latest ATLAS results on the search for heavy resonance decaying into b-quarks. In addition, a series of b-tagging techniques based on machine learning techniques will be included. And as we are approaching to the era of high luminosity of the LHC, to cope with the increase of the radiation and bandwidth, the ATLAS Inner Detector will be replaced by an all-silicon system, the Inner Tracker. A series testing of the basic unit of the pixel detector, module, will be presented.

**报告人简介：** 董彬彬，recently obtained her PhD in particle physics at Shanghai Jiao Tong University in June 2022, and worked on searches for new heavy resonances using the ATLAS detector during her PhD. She is currently a postdoctoral research fellow at Michigan State University, with a strong interest in top physics, BSM physics and machine learning applications in particle physics.

**时间：** 7月13日 周三 19：00 ---19：30，线上

**会议ID：** Meeting ID: 487 887 1035 (Zoom)

Passcode: 527772 Indico:https://indico.ihep.ac.cn/event/16918/

Meeting link: https://cern.zoom.us/j/4878871035?pwd=SjJuekR3cnBueUx3Y1pvUzl6QkZNUT09

组织人：尤郑昀（中山大学） 李强（北京大学） 卢梦（中山大学） 李静舒（中山大学）