



SPeCial4Young

SYSU-PKU Collider physics forum For Young scientists



中山-北大联合高能物理青年论坛第五十二期

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：Mass measurements of radioactive nuclei with modern techniques

摘要： Nuclear mass is one of the most fundamental quantities which plays an important role in the nuclear structure and astrophysics studies. The knowledge of nuclear masses provides crucial tests of current theoretical descriptions of nuclei, including mass models and mass formulae, the study of the character of nucleonic interactions in the nuclear medium, and the search for the superheavy elements. Furthermore, the determination of nuclear masses has an impact on the elaboration of models of stellar evolution, e.g. the r-process or the rp-process. An emerging field of application for high-accuracy mass measurements on radionuclides concerns tests of fundamental symmetries as, for example, the study of superallowed β -decays to test the unitarity of the Cabibbo-Kobayashi-Maskawa quark-mixing, neutrino related physics. Mass measurements of nuclides with presently unknown masses are not so easy since these nuclides are located far from valley of β -stability in the chart of nuclides. Such nuclides have inevitably small production cross sections and therefore, the measurement techniques with high efficiencies and as fast as possible are required. Another trend for mass spectrometry is to measure the masses as precise as possible. The most efficient and popular modern techniques for mass measurements will be discussed in the report and the related physics will be briefly introduced. Young students are welcome to join to have fun and make discoveries based on the modern technique worldwide.

Indico: <https://indico.ihep.ac.cn/event/20843/>

报告人简介： 葛壮，博士在中国科学院大学硕博连读，从事重离子储存环相关的研究，同时在日本理化学研究所-日本埼玉大学联合培养，基于日本RIBF的放射性束流装置相关的研究工作，拿到博士学位。之后去往芬兰Jyväskylä大学的IGISOL放射性束流装置上从事基于Penning Trap, MR-TOF质谱仪相关的博士后研究。第二期博士后前往德国重离子研究中心GSI，从事基于重离子碎片分离器和MR-TOF质谱仪相关的核物理研究工作。目前得到芬兰科学院基金资助(Academy Fellowship)，刚成立自己的小组，在Jyväskylä大学从事原子核相关性质，如质量，衰变特性的精细测量。



时间： 11月8日 周三 17:30 ---18:00，线上

会议ID： 677 0508 2266 (Zoom) Passcode: 123456

Meeting link: <https://cern.zoom.us/j/67705082266?pwd=RWx4RjBOUXZ0VFdZbVZvS2ZQcmJqQT09>