



SPeCial4Young

SYSU-PKU Collider physics forum For Young scientists



中山-北大联合高能物理青年论坛第六期

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: Bread and Butter Physics at High-energy Muon Colliders

摘要: Our recent studies suggest that the physics at a high-energy muon collider can be treated in a factorization picture. At an energy well above the electroweak scale, the collinear splitting phenomena dominate due to the large logarithm enhancement both in the ISR and FSR. All the SM particles, including electroweak gauge bosons, essentially become massless, and the electroweak gauge symmetry is gradually restored. With the DGLAP formalism, we resum large logarithms in the ISR as EW parton distribution functions. As for BSM, take the muon-Higgs coupling as an example, anomalous muon-Higgs coupling will lead to significant deviation from the SM in multi-boson production.

报告人简介: Keping Xie, graduated from PKU in 2015 and obtained PhD at Southern Methodist University in 2019, and is now a postdoc at University of Pittsburgh. He works on the high-energy phenomenology, mainly focus



on the precision and resummation calculations. As a member of the CTEQ-TEA (CT) collaboration, he participates in the development of a new generation of QCD PDFs CT18, and the QED corrections (CT18QED). Recently he dedicates to the EW factorization, which involves the EW gauge bosons as well as Higgs bosons as partons to resum large logarithms as PDFs for ISR and fragmentation functions for FSR.

时间: 6月15日 周三 20:00 — 20:30, 线上

会议ID: Meeting ID: 487 887 1035 (Zoom)

Passcode: 527772 Indico: <https://indico.ihep.ac.cn/event/16750/>

Meeting link: <https://cern.zoom.us/j/4878871035?pwd=SjJuekR3cnBueUx3Y1pvUzl6QkZNUt09>

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