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The 89th HENPIC seminar by Dr. Xiaojun Yao (姚晓骏), MIT, US (麻省理工学院)，Feb.6., 2020, Thursday, 10:30am (Beijing time)

Title: From Open Quantum System to Quarkonium Transport inside Quark-Gluon Plasma

Abstract:

The production of heavy quarkonium in heavy ion collisions has been used as
an important probe of the quark-gluon plasma. Transport equations that take into account static plasma screening effect, dissociation and recombination have achieved great success in phenomenology. In this talk, I will explain why transport equations work well to describe the quarkonium evolution inside the quark-gluon plasma. I will start with the recent development in applying the open quantum system formalism to study quarkonium in-medium dynamics and show how to derive the transport equation in this formalism by using effective field theory. Weak coupling and Markovian approximations used in the derivation will be justified from a separation of scales. Finally, I will show some phenomenological results on Upsilon based on coupled transport equations of open heavy flavors and quarkonia.

个人简介：
姚晓骏，麻省理工学院博士后。2013 年在山东大学获得物理学士学位，2019 年在杜克大学获得物理博士学位。从 2019 年开始在麻省理工学院做博士后至今。主要研究有效场论和非平衡态物理在重离子碰撞中的应用。