

# 北京大学量子材料科学中心

## International Center for Quantum Materials, PKU

### Seminar

*Fudan University*

**Time: 16:00pm, Jan. 10, 2018 (Wednesday)**

**时间: 2018年1月10日 (周三) 下午 16:00**

**Venue: Room W563, Physics Building, Peking University**

**地点: 北京大学物理楼 西563**

#### Abstract

We study the band structure topology and engineering from the interplay between local moments and itinerant electrons in the context of pyrochlore iridates. For the metallic iridate  $\text{Pr}_2\text{Ir}_2\text{O}_{12}$ , the Ir 5d conduction electrons interact with the Pr 4f local moments via the f-d exchange. While the Ir electrons form a Luttinger semimetal, the Pr moments can be tuned into an ordered spin ice with a finite ordering wavevector, dubbed  $\sqrt{2}\times\sqrt{2}\times\sqrt{2}$ -Hertog state, by varying Ir and O contents. We point out