



## Weekly Seminar

### Fractional Topological Phases in Twisted Bilayer MoTe<sub>2</sub>

王冲

清华大学

**Time: 3:00 pm, Sept.18, 2024 (Wednesday)**

**时间: 2024年9月18日 (周三) 下午3:00**

**Venue: Room w563, Physics building, Peking University**

**地点: 北京大学物理楼, 西563会议室**

#### Abstract

The interplay between topology and correlation has been a driving force in the study of moiré superlattices, both experimentally and theoretically. Recently, experimental observations of fractional topological phases in twisted bilayer MoTe<sub>2</sub> have garnered significant interest in this system. In this talk, I will present our recent work on fractional topological phases in twisted MoTe<sub>2</sub>, with an emphasis on the method of modelling single particle band structures. Specifically, I will cover (a) a brief introduction to twisted bilayer MoTe<sub>2</sub>, (b) an accurate modeling of twisted bilayer MoTe<sub>2</sub> at various twist angles, and (c) many-body calculations supporting the existence of correlated topological phases. The talk will conclude with an outlook on future opportunities and challenges in the study of twisted bilayer MoTe<sub>2</sub>.

#### About the speaker

王冲, 清华大学助理教授。2014和2019年分别在南京大学物理学院和清华大学高等研究院获得理学学士和理学博士学位。2019-2024年先后在美国卡耐基梅隆物理系和美国华盛顿大学材料科学与工程系从事博士后研究, 2024年5月入职清华大学物理系。王冲主要从事凝聚态计算和理论方面的研究, 重点关注新奇量子材料的物性响应, 近期他主要关注莫尔超晶格材料中的演生物态。