



### Weekly Seminar

#### Measuring Quantum Oscillations in Extreme Magnetic Fields

**Jinglei Zhang (张警蕾)**

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**Time: 4:00pm, Sep. 20, 2017 (Wednesday)**

**时间: 2017年9月20日 (周三) 下午4:00**

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

**地点: 北京大学物理楼, 西563会议室**

#### Abstract

Measurement of quantum oscillations is a very powerful way for studying the Fermi-surface topologies. Recently, several techniques for probing the quantum oscillations had been successfully constructed in our Water-Cooled magnets with the highest field up to 38.5T and lowest temperature down to 0.3K. In this presentation, I will first explain the basic principles of these techniques and demonstrate their applications on topological materials and superconductors. In the second part, I will discuss the effect of hydrostatic pressure on the magnetotransport properties of zirconium pentatelluride. We find that the quasi-linear magnetoresistance decreases drastically under pressure. Besides, the change of the quantum oscillation phase from topological nontrivial to trivial is revealed around 2.0 GPa. Both demonstrate that the accidental Dirac cone in ZrTe5 is violated under pressure.

#### About the speaker

张警蕾, 中科院强磁场科学中心副研究员。2014年, 在浙江大学物理系获得凝聚态物理学博士学位, 同年加入中科院强磁场中心。目前负责强磁场下物性测量系统的设计和搭建。近三年依托自主搭建的强场测量装置与国内外课题组合合作在学术期刊Nature Physics, Nature Communications, Physical Review Letters, PNAS等杂志等发表论文十余篇。研究兴趣主要集中在拓扑材料 非常规超导等材料强磁场下物性的研究。