



Seminar

Description, Classification and Specification of Weyl Semimetals ----from the Point of View of a Material Physicist

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Time: 16:00pm, December 11, 2017 (Monday)

时间: 2017年12月11日 (周一) 下午 16:00

Venue: Room W563, Physics Building, Peking University

地点: 北京大学物理楼西563

Abstract

Recent experimental studies in condensed matter have realized a new type of the topological semimetal, Weyl semimetal, whose band structure hosts Weyl quasiparticles as its low-energy excited states. As a material physicist dedicating the past few years to the study of semimetal materials, I would like to reassess the classification and specification of Weyl semimetals in this talk. I will present my observations and understandings of the electrical transport properties of several semimetal materials, mainly of the archetypal Weyl semimetal TaAs family. I will discuss the features which can be seen as a fingerprint of the existence of the Weyl quasiparticles. I will mainly focus on the chiral anomaly (Adler-Bell-Jackiw anomaly) in TaAs and a field-induced Weyl node annihilation in TaP.

About the Speaker

Shuang Jia obtained his PH. D. degree from Iowa State University in 2008. He worked as a post-doctoral researcher in Princeton University from 2008 to 2012. Since then he is a tenure-track associate professor in the International Center for Quantum Materials, Peking University. His research interest is design, synthesis and characterization for novel solid state bulk materials, including topological insulators and semimetals, thermoelectric power materials and superconductors.