

凝聚态物理-北京大学论坛

2017年第17期 (No. 408 since 2001)

Spin Hall effect as a probe of magnetic fluctuation and a.c. spin currents

魏大海 研究员

时间：9月28日（星期四）15:00—16:30

地点：北京大学物理大楼西202报告厅

•**Abstract:** Spin Hall effect (SHE) and its inverse enable the interconversion between charge and spin currents with strong spin-orbit interaction, and have been widely used for the the generation and detection of spin currents. In this talk, I will present two of experimental works on the spin currents and spin Hall effect. One is the SHE in a weak ferromagnetic metal in the vicinity of the magnetic phase transition where the spin-/charge- currents conversion reflects a nonlinear magnetic susceptibility. It shows that the spin current could be used as a sensor for detecting small magnetic fluctuations. The other is the large SHE of a.c. spin current generated by the spin pumping in a hetrostructure. Such a.c. spin current is at least one order of magnitude larger than the d.c.ones, could significant improve the efficiency of spin pumping and related spintronic devices.

•**About speaker :** 魏大海，中国科学院半导体所研究员，博士生导师。1982年12月出生。2010年1月于复旦大学物理系取得博士学位，随后先后在日本东京大学、德国雷根斯堡大学等海外知名高校工作。2015年入选第十一批国家“青年千人计划”，进入半导体研究所超晶格国家重点实验室工作。主要从事纳米磁学和自旋电子学领域的研究，在侧向自旋阀和自旋泵浦等多种自旋器件结构中，研究自旋注入、探测以及调控，通过自旋霍尔效应、自旋轨道矩等自旋相关的输运现象，探索半导体中自旋相关各种新奇特性、效应及其可能的应用。

邀请人:叶培研究员 ye_yu@pku.edu.cn

北京大学物理学院凝聚态物理与材料物理所

<http://www.phy.pku.edu.cn/~icmp/forun/2017/2017qiu.xml>