



復旦大學

Fudan University



復旦大學物理系物質科學報告

Physics Department Colloquium

Magnetoelectric responses from topological magnets

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Intriguing magnetoelectric responses can be anticipated to emerge from topological magnets characterized by topological indexes either in real space or in momentum space. One such example is magnetic skyrmions and emergent monopoles in noncentrosymmetric, e.g. chiral-lattice, magnets as protected by skyrmion number and endowed with real-space emergent magnetic flux. Dynamical responses of skyrmions and monopoles coupled with electron transport and dielectric characteristics are investigated in terms of Lorentz transmission electron microscopy/holography, small-angle neutron/x-ray scattering, microwave spectroscopy, magneto-transport and magnetoelectric characteristics.

One other important example of topological magnets is magnetic topological insulators, in which the spin-momentum locking as well as the magnetization-induced mass-gap shows up to form the ideal 2D Weyl fermion system at surface. With control of the magnetizations on the top and bottom surfaces of the thin film, quantum anomalous Hall state and quantum magnetoelectric (Axion insulator) state can be formed and the topological magneto-optical effects may show up therein.

Time: 2:00pm, Tuesday, May 16, 2017

Location: Physics Building, Room 221B

(Cookies and coffee are served from 1:30 pm)