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(NCEM, Lawrence Berkeley Laboratory, Berkeley, CA)

28 February 2014 - 2pm

Room K233 (1st floor, building K - Institut Néel) [[Access Map](#)]

Aliance 2 "Spintronique"

TAILORING THE CHIRALITY OF MAGNETIC DOMAIN WALLS BY INTERFACE ENGINEERING

Summary : The rich physics of chiral spin textures includes strongly asymmetric response of left-handed versus right-handed spin structures under applied current, and extremely high domain wall mobility in response to ultralow critical current density. These properties make chiral magnetic materials promising candidates for the development of new spintronics applications.

Using spin-polarized low energy electron microscopy, we observed domain wall structures with chirality in perpendicularly magnetized system. Moreover, how one might control the magnetic chirality of domain walls and change it between right-handed, left-handed, or achiral, has remained a key question in this field. We discovered that subtle adjustment of a non-magnetic spacer layer allows us to tailor the chirality of a magnetic film. By introducing magnetic chirality as a new degree of the freedom, this discovery may raise rich possibilities to influence the dynamic properties of magnetic domain walls.



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