



Contribution ID: 6

Type: Talk

【663】 Imaging topological electron-spin textures by using atomic-resolution Lorentz TEM

Thursday 29 August 2019 14:45 (30 minutes)

The nanometer-scale vortex-like spin textures, such as vortex-antivortex pairs in ferromagnetic (FM) domain walls [1], vortices in superconductors [2], skyrmion (lattice) [3] and antiskyrmions [4] in magnets with inversion symmetry, have recently attracted enormous attention owing to their topological manner [5]. To confirm such minute complex spin textures and their dynamics with external stimuli, the real space observation have been performed by Lorentz transmission electron microscopy (TEM).

[1] X.Z. Yu, et al., Adv. Mater. 29, 1603958 (2017). [2] A. Tonomura, et al., Nature 397, 308 (1999). [3] X.Z. Yu, et al., Nature 465, 901 (2010). [4] Ajaya K. Nayak, et al., Nature 548, 561 (2017). [5] N. Nagaosa and Y. Tokura, Nat. Nanotechnol. 8, 899 (2013). [6] X.Z. Yu, et al., Nature 564, 95 (2018).

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Session Classification: Skyrmions in magnetic materials

Track Classification: Skyrmions in magnetic materials