

Abstract Submitted
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Observation of spin transfer torques in the transverse magnetic susceptibility of the Skyrmion lattice phase of MnSi FELIX RUCKER, CHRISTOPH SCHNARR, ANDREAS BAUER, CHRISTIAN PFLEIDERER, Lehrstuhl für Topologie Korrelierter Systeme, Technische Universität München, Garching, Germany — In the Skyrmion lattice phase of MnSi the observation of sizeable spin transfer torques [1-3] promises easy experimental access to the precise qualitative and quantitative form of the Landau Lifshitz Gilbert equation. We report measurements of the transverse magnetic susceptibility, χ_{\perp} , in the skyrmion lattice phase of MnSi. Our measurements show a distinct increase of χ_{\perp} with increasing current density around the critical current density j_c . We further find a sizable dissipative part of χ_{\perp} evolving above j_c . We discuss the broader implications of our experimental findings, which provide, for the first time, a direct link between a thermodynamic property and the effects of spin transfer torques in skyrmion lattices.

[1] F. Jonietz et al., Science **330**, 1648 (2010)

[2] T. Schulz et al., Nat. Phys. **8**, 301 (2012)

[2] K. Everschor et al., Phys. Rev. B **86**, 054432 (2012)

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