

Tuesday, August 30th 2022, 10:30 (CET)

THEP Seminar Room

Room 05-427, Staudingerweg 7

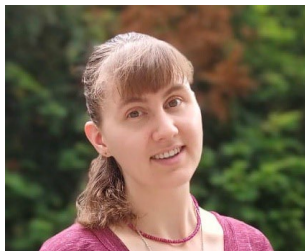
The seminar will also be on Zoom (987 9173 9851)

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Atomistic Simulations of Distortion-limited High-speed Dynamics of Antiferromagnetic Skyrmions



In antiferromagnetic materials, domain walls and skyrmions can be efficiently driven by currents and achieve velocities of several kilometers per second. However, their dynamics are limited by a velocity akin to the speed of light for the material. The specifics of these high velocity dynamics, in which solitons begin to display relativistic effects, have been well understood for the case of domain walls (single-dimensional particles) but not for skyrmions. In this talk, I will show some results of a systematic atomistic study of skyrmion dynamics in chiral magnetic materials. I will also present a novel outlook on the role of skyrmion equilibrium structure and energetics on their dynamic deformation patterns, and discuss the absence of behaviors similar to ones observed in relativistic domain walls.