

Low velocity motion of skyrmions in multilayer systems

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Magnetic quasi-particles such as skyrmions are of importance for novel magnetic information storage designs [1-5]. In ultrathin multilayer systems skyrmions stability is aided by the interfacial Dzyaloshinskii-Moriya interaction. In the experiment outlined here we stabilised skyrmions in a 2 μm wire of [Pt/CoB/Ir]. Short current pulses (10 ns) were used to move the skyrmions through the wire while a static out of plane magnetic field was applied. Sequential static scanning transmission microscopy images were taken. Prior to each image two consecutive current pulses were applied. The applied field was used to access a large range of skyrmion diameters. The velocity and skyrmion Hall angle were evaluated from the images. No diameter or velocity dependence on the skyrmion Hall angle was observed. This is attributed to the local energy landscape dominating the motion [6].

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