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Manipulation of propagating spin waves in straight and curved magnetic microstrips[1] ARABINDA HALDAR, HAU-JIAN LIU, Colorado State University, HELMUT SCHULTHEISS, Argonne National Laboratory, KATRIN VOGT, Technische Universität Kaiserslautern, AXEL HOFFMANN, Argonne National Laboratory, KRISTEN BUCHANAN, Colorado State University — The main challenges in realizing magnonics devices are the generation, manipulation and detection of spin waves, especially in metallic magnetic materials where the length scales are of interest for applications. We have studied the propagation of spin waves in transversely magnetized Permalloy (Py) microstrips of different shapes using micro-Brillouin light scattering. The Py stripe was 30-nm thick, several micrometers wide and >50 μm long. Spin waves were excited in the Py strip using a 2-μm wide antenna. We compare the spin wave propagation along a straight wire to the propagation along a magnetic microstrip with a smooth bend. We will also discuss the use of a current through a gold wire under the Permalloy to provide a local magnetic field to maintain a transverse magnetization around the bend.

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