Abstract Submitted
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Spin spiral order and magnetization dynamics in magnetic nanowires[1] OLEG TRETIAKOV, ARTEM ABANOV, Texas A&M University — I will talk about current-induced magnetization dynamics in a thin ferromagnetic wires with spin spiral order. This order is known to be caused by Dzyaloshinskii-Moriya interaction (DMI). We analytically find a spiral domain wall configuration of the magnetization and the domain wall width. Our findings show that above a certain value of DMI a domain wall configuration cannot exist in the wire. Below this value we determine the domain wall dynamics for small currents, and calculate the drift velocity of the domain wall along the wire. We show that the DMI suppresses the minimum value of current required to move the domain wall. It also may lead to increase of the domain wall drift velocity.

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