Joint Annual Meeting of the Swiss and Austrian Physical Society 2023



Contribution ID: 95

Type: Talk

[602] Developing Metallic Multilayers Hosting Different Skyrmion Types Toward Local Control via Electric Fields

Wednesday 6 September 2023 17:30 (15 minutes)

The coexistence of two skyrmion types in a single system is highly relevant for future racetrack memory devices using such solitons. Here, we demonstrate a metallic ferromagnetic/ferrimagnetic (FM/FI) bi-layer system in which two skyrmion types are successfully stabilized at room temperature. This system has a simpler structure compared to the previous demonstration of the same observation in a FM/FI/FM trilayer. We show also how the two skyrmion types can be tuned by changing the magnetic properties of the FI. The simpler structure together with the FI control layer provide the opportunity for subsequent local control of the skyrmion type and pave the way for device implementation.

Theoretical Work

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Session Classification: Spintronics and Magnetism at the Nanoscale

Track Classification: Spintronics and Magnetism at the Nanoscale