



# Library Indian Institute of Science Education and Research Mohali



**DSpace@IISERMohali (/jspui/)**  
**/ Publications of IISER Mohali (/jspui/handle/123456789/4)**  
**/ Research Articles (/jspui/handle/123456789/9)**

Please use this identifier to cite or link to this item: <http://hdl.handle.net/123456789/4445>

Title:	Engineering antiferromagnetic skyrmions and antiskyrmions at metallic interfaces
Authors:	Mukherjee, Arnob (/jspui/browse?type=author&value=Mukherjee%2C+Arnob) Kathayat, Deepak S. (/jspui/browse?type=author&value=Kathayat%2C+Deepak+S.) Kumar, Sanjeev (/jspui/browse?type=author&value=Kumar%2C+Sanjeev)
Keywords:	Antiferromagnetic Skyrmions Antiskyrmions
Issue Date:	2022
Publisher:	American Physical Society
Citation:	Physical Review B, 105(7), 75102
Abstract:	We identify a mechanism to convert skyrmions and antiskyrmions into their antiferromagnetic (AFM) counterparts via interface engineering. The key idea is to combine properties of an antiferromagnet and a spin-orbit (SO) coupled metal. Utilizing hybrid Monte Carlo (HMC) simulations for a generic microscopic electronic Hamiltonian for the interfacial layers, we explicitly show the emergence of AFM skyrmions and AFM antiskyrmions. We further show that an effective spin Hamiltonian provides a simpler understanding of the results. We discuss the role of electronic itinerancy in determining the nature of magnetic textures, and demonstrate that the mechanism also allows for a tuning of antiskyrmion size without changing the SO coupling.
Description:	Only IISER Mohali authors are available in the record.
URI:	<a href="https://doi.org/10.1103/PhysRevB.105.075102">https://doi.org/10.1103/PhysRevB.105.075102</a> ( <a href="https://doi.org/10.1103/PhysRevB.105.075102">https://doi.org/10.1103/PhysRevB.105.075102</a> ) <a href="http://hdl.handle.net/123456789/4445">http://hdl.handle.net/123456789/4445</a> ( <a href="http://hdl.handle.net/123456789/4445">http://hdl.handle.net/123456789/4445</a> )
Appears in Collections:	Research Articles (/jspui/handle/123456789/9)

Files in This Item:

File	Description	Size	Format	
Need To Add...Full Text_PDF..pdf (/jspui/bitstream/123456789/4445/1/Need%20To%20Add%e2%80%a6Full%20Text_PDF..pdf)		15.36 kB	Adobe PDF	<a href="#">View/Open (/jspui/bitstream/123456789/4445/1/Need%20To%20Add%e2%80%a6Full%20Text_PDF..pdf)</a>

[Show full item record \(/jspui/handle/123456789/4445?mode=full\)](#)

[Statistics \(/jspui/handle/123456789/4445/statistics\)](#)

Items in DSpace are protected by copyright, with all rights reserved, unless otherwise indicated.

