

Abstract Submitted
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Annihilation of skyrmions by spin wave in crossbar geometry¹

YIZHOU LIU, Department of Electrical and Computer Engineering, University of California Riverside, JIADONG ZANG, Department of Physics and Astronomy, Johns Hopkins University, ROGER LAKE, Department of Electrical and Computer Engineering, University of California Riverside — Magnetic Skyrmions are possible candidates for future information storage applications due to their small size and topological protection. Understanding of the creation and annihilation process is necessary for developing a Skyrmion-based technology. We theoretically study the annihilation process within a crossbar geometry. By micromagnetic simulation, we find the annihilation of a single Skyrmion can be achieved by injecting a spin wave. The influence of a defect in this system is also discussed. Our method could be applied to individually address arrays of Skyrmions in a memory architecture.

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