

Abstract Submitted
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Breather states in magnetic domain wall racetrack memory samples JOHN EVES, REMO HUGLI, NAOISE GRISEWOOD, BENI BRAUN, UCD
— Proposed magnetic domain wall(DW) racetrack memory [1] exploits controlled motion of magnetic DWs along magnetic nanowires, and the sequence of DWs encodes the bit states. Here we investigate the possibility of the existence of dynamically bound states of pairs of DWs. We show that by the choice of suitable initial conditions for two DWs in a racetrack geometry, such dynamical states can be prepared by a suitable applied field. The breather states correspond to two DWs which have the same chirality and which oscillate around their common center of mass.

[1] S.S.P. Parkin, Science 320, 190 (2008)

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