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Magnetic friction between two three-dimensional Potts systems[1]
LINJUN LI, MICHEL PLEIMLING, Virginia Tech — Magnetic systems, whose surfaces are coupled by boundary spins, experience magnetic friction if one system is moving with a relative velocity along the coupled surface. In our research, we focus on systems consisting of two three-dimensional (3D) magnetic Potts blocks as well as on the systems consisting of one 3D magnetic Potts wedge and one 3D magnetic Potts block. We study cases where the total number of Potts states rang from two (Ising case) to nine. By varying the strength of the coupling between the two contacting layers and/or the value of the relative velocity, we find interesting non-equilibrium behavior emerging at the contacting surfaces and tips.

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