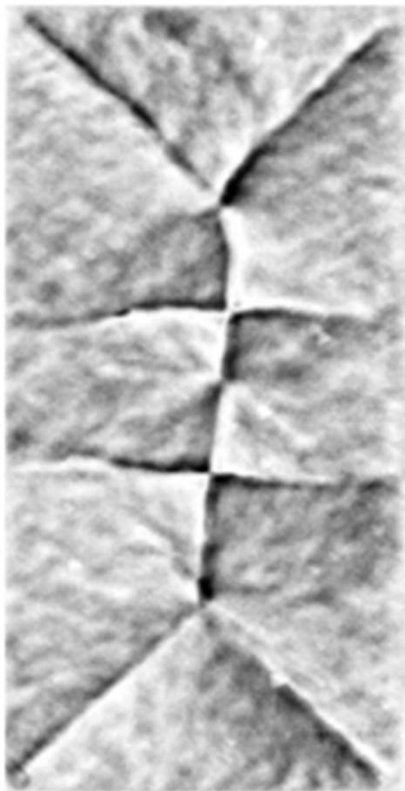


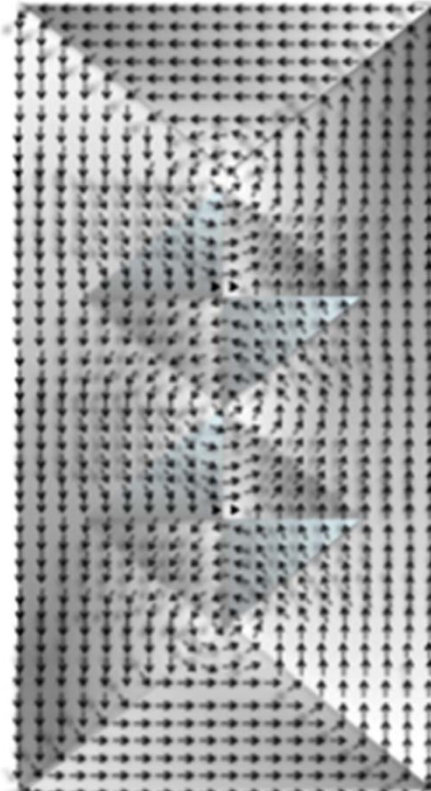
# Vortices and Antivortices on a Crosstie Wall

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MFM Image



Micromagnetics



On the left is a magnetic force microscope (MFM) image of a CoFeB patterned film, and on the right is a representation of the micromagnetics (distribution of local magnetic moments). The pattern shows a crosstie wall at the middle comprised of two magnetic antivortices are at the centers of the diamonds and three vortices at the junctions connecting the triangular and diamond areas. Patterns such as these can produce microwaves by dc current excitations using the spin-torque effect.