Dynamics of steps along a phase boundary

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We study dynamic evolution of steps along a phase boundary in a two-dimensional discrete model of twinning. The model consists of antiplane shear deformation of a cubic lattice with bi-stable interactions along one component of shear strain and harmonic interactions along the other. We construct analytical solutions that predict sequential one-by-one propagation of steps. Our numerical simulations indicate that these solutions are stable. This talk will be based on recent work with Yubao Zhen and Basant Sharma.