

Explicit kinetic relation from the “first principles”

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We study a fully inertial lattice model of a martensitic phase transition which takes into account interactions of first and second nearest neighbors. Although the model is Hamiltonian at the microscale, it generates a nontrivial macroscopic relation between the velocity of the martensitic phase boundary and the driving force of transformation. The apparent dissipation is due to the induced radiation of lattice waves carrying energy away from the front.