

Abstract Submitted  
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**Hierarchical freezing in a lattice model with a nonperiodic ground state**<sup>1</sup> JOSHUA E.S. SOCOLAR, TRAVIS BYINGTON, Duke University — A recent result in tiling theory provides a two-dimensional lattice model with nearest and next-nearest neighbor interactions that has a limit-periodic ground state. During a slow quench from the high temperature, disordered phase, the ground state emerges through an infinite sequence of phase transitions, all related by renormalizations of the temperature scale with the sequence of critical temperatures approaching zero. As the temperature is decreased, sublattices with increasingly large lattice constants become ordered. Quenching at any finite rate eventually results in glass-like state due to kinetic barriers created by simultaneous freezing on sublattices with different lattice constants.

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