

Abstract Submitted
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Topological insulators on the ruby lattice¹ XIANG HU, MEHDI KARGARIAN, GREGORY FIETE, The University of Texas at Austin — We study a tight-binding model on the two-dimensional ruby lattice. This lattice supports two types of second neighbor spin-dependent hopping parameters in an s-band model that preserves time-reversal symmetry. We discuss the phase diagram of this model for various values of the hopping parameters, and note an interesting interplay between the two spin-orbit terms that individually would drive the system to a Z_2 topological insulating phase. The fidelity of each phase is also calculated.

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