

Abstract Submitted
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Fragile Mott Insulators¹ STEVEN KIVELSON, Department of Physics, Stanford University, HONG YAO, Department of Physics, University of California Berkeley — We prove that there exists a class of crystalline insulators, which we call “fragile Mott insulators” which are not adiabatically connected to any sort of band insulator provided time-reversal and certain point-group symmetries are respected, but which are otherwise unspectacular in that they exhibit no topological order nor any form of fractionalized quasiparticles. Different fragile Mott insulators are characterized by different nontrivial one-dimensional representations of the crystal point group. We illustrate this new type of insulators with two examples: the d-Mott insulator discovered in the checkerboard Hubbard model at half-filling and the Affleck-Kennedy-Lieb-Tasaki insulator on the square lattice.

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