

Abstract Submitted
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Charges play musical chairs on the pyrochlore lattice DORON BERGMAN¹, UC, Santa Barbara, GREGORY FIETE, LEON BALENTS — We study a highly idealized model for quantum “charge order” phase transitions on a pyrochlore lattice, loosely motivated by observations of a “valence skipping” structure in vanadium spinels (K. Matsuno et al, PRL 90, 096404, 2003). The model maps onto a particular 3+1-dimensional compact quantum electrodynamics. We describe the transition in terms of a dual theory of monopole defect proliferation. The model gives rise to a number of degenerate low energy excitations which can condense in various patterns. Latest results will be presented.

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