

Abstract Submitted
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The fate of Z_2 topological insulator in optical lattices with disorder AHAD KHALEGHI ARDABILI, Koç University PhD student, TEKIN DERELI, Professor of Physics KoçUniversity, ÖZGÜR MÜSTECAPLOLU, Assistant Professor, Department of Physics Koç University — Topological insulator is considered to be very robust against any perturbation which Doesn't break time-reversal invariant and there are now many proposal about creating such systems in cold atom area which one can have very good control for tuning it. Here we investigate the effect of disorder in the TI Z_2 system proposed in B. Berri and N. R. Cooper PRL 107, 145301 (2011) We show that under a strong disorder the system undergoes a topological phase transition.

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