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Axion field theory and Z_{16} classification of time reversal invariant topological superconductors YINGFEI GU, XIAOLIANG QI, Stanford Univ — Time-reversal invariant topological superconductors (TRI TSC) are gapped superconductors with topologically robust gapless modes on the boundary. In the work by X. L. Qi et al, [PRB, 87, 134519(2013)], a topological field theory description was proposed for 3+1-dimensional TRI TSC, which contains an axionic coupling between superconducting phase and electromagnetic field. In my talk, I will describe a generalization of this theory to include interaction effects which provides a physical explanation why the integer classification is reduced to Z_{16} . I will also attempt to generalize our results to higher dimensions and give constraints on the possible collapsing of topological classification induced by interaction effects.

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