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**Characterizing excitation statistics in fractionalized phases through spectral functions** SIDDHARDH C. MORAMPUDI, FRANK POLLMANN, Max Planck Institute for the Physics of Complex Systems, Dresden, Germany, ARI M. TURNER, Johns Hopkins University, Baltimore, USA — Characterizing topologically ordered phases of matter involves identifying the statistics of their emergent anyonic excitations. We show that the exchange statistics of excitations show characteristic signatures in experimentally relevant spectral functions. Drawing motivation from models of gapped quantum spin liquids and fractional Chern insulators which possess fractionalized anyonic excitations, we consider a model with gapped two particle and three particle abelian anyonic excitations. We show that the low energy part of spectral functions can show a robust behaviour from which the statistics of the excitations can be obtained.

Siddhardh Morampudi  
Max Planck Institute for the Physics of Complex Systems, Dresden, Germany

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