

Abstract Submitted
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Chiral anomaly in disordered Weyl semimetals¹ JUNHYUN LEE, J. H. PIXLEY, JAY D. SAU, Condensed Matter Theory Center, University of Maryland, College Park — We consider the effect of disorder on the chiral anomaly in Weyl semimetals. The chiral anomaly is robust under small perturbations and thus will not be affected by a small to moderate disorder strength. In fact, we argue that the chiral anomaly can prevent Anderson localization even for strong disorder ($k_{FLMFP} \ll 1$, where conventional Anderson localization occurs) as long as the disorder does not couple the Weyl nodes. Here we study the competition between the chiral anomaly and the tendency of Anderson localization in disordered Weyl semimetals.

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