

Abstract Submitted  
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**Universal framework for identifying topological materials and its numerical implementation in Z2Pack software package** DOMINIK GRESCH, MATTHIAS TROYER, ALEXEY SOLUYANOV, ETH Zurich, GABRIEL AUTES, OLEG YAZYEV, EPFL, ANDREI BERNEVIG, Princeton University, DAVID VANDERBILT, Rutgers University — Band structure topology has drastic effects on many observable phenomena in solids, and thus is a fundamental characteristic of a material. We present general framework for identifying various topologies of band structures and introduce a public software package –Z2Pack – for computing the associated topological invariants. Z2Pack works with first-principles calculations, tight-binding and k.p models. It can be used to identify both topological insulators and semimetals.

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