

Abstract Submitted  
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**Theoretical prediction of new topological insulators in filled skutterudites** BINGHAI YAN, Department of Physics, McCullough Building, Stanford University, Stanford, CA 94305-4045, LUKAS MUECHLER, Institut fuer Anorganische Chemie und Analytische Chemie, Johannes Gutenberg - Universitaet, 55099 Mainz, Germany, XIAO-LIANG QI, Department of Physics, McCullough Building, Stanford University, Stanford, CA 94305-4045, CLAUDIA FELSER, Institut fuer Anorganische Chemie und Analytische Chemie, Johannes Gutenberg - Universitaet, 55099 Mainz, Germany, SHOU-CHENG ZHANG, Department of Physics, McCullough Building, Stanford University, Stanford, CA 94305-4045 — We have reported a unique class of topological insulators, filled skutterudite (FS) compounds, using ab initio calculations. We find that several FSs are not only two-dimensional topological insulators as quantum wells like HgTe, but also three-dimensional topological Kondo insulators. Different from previously reported topological insulators, they have unique band inversion feature in band structures. Their advantages are discussed to realize superconductivity proximity and other topological phenomena.

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