

Abstract Submitted
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Topological Superconductivity in Dirac Semimetals MASATOSHI

SATO, Kyoto Univ, SHINGO KOBAYASHI, Nagoya Univ — Dirac semimetals host bulk band-touching Dirac points and a surface Fermi loop. We develop a theory of superconducting Dirac semimetals. Establishing a relation between the Dirac points and the surface Fermi loop, we clarify how the nontrivial topology of Dirac semimetals affects their superconducting state. We note that the unique orbital texture of Dirac points and a structural phase transition of the crystal favor symmetry-protected topological superconductivity with a quartet of surface Majorana fermions. We suggest the possible application of our theory to recently discovered superconducting states in Cd_3As_2 .

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