

Abstract Submitted
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Structured Weyl Points in Fulde-Ferrell Superfluids YONG XU,
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demonstrate that a Weyl point, widely examined in 3D Weyl semimetals and super-
fluids, can develop a pair of non-degenerate gapless spheres. Such a bouquet of two
spheres is characterized by three distinct topological invariants of manifolds with
full energy gaps, i.e., the Chern number of a 0D point inside one developed sphere,
the winding number of a 1D loop around the original Weyl point, and the Chern
number of a 2D surface enclosing the whole bouquet. We show that such structured
Weyl points can be realized in the Fulde-Ferrell superfluid quasiparticle spectrum of
a 3D degenerate Fermi gas subject to spin-orbit couplings and Zeeman fields.

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