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Superconductivity in Weyl Semimetals VIVEK AJI, HUAZHOU WEI, University of California Riverside, SUNG-PO CHAO, NTHU Taiwan — Weyl fermions are linearly dispersing massless particles in three dimensions. They are chiral in that the projection of their spin along their momenta is a conserved quantum number. Interest in these particles in the condensed matter context was piqued by the possibility of their emergence in the low energy sector of Pyrochlore Iridates. Since then a number of other systems have been suggested that also support such excitations. We discuss the nature of the superconducting phases that arise for chemical potential at the Weyl nodes. Since the density of states vanishes a finite coupling strength is needed to nucleate these phases. Among the possibilities are the finite momentum pairing state (FFLO) and the conventional BCS state.

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