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Magnetic Oscillations in Weyl Semimetals PHILLIP ASHBY, JULES CARBOTTE, McMaster University — Weyl semimetals are a three-dimensional phase containing band touchings at isolated points in the Brillouin zone. A Weyl semimetal can be thought of as a higher dimensional generalization of graphene. We study the thermodynamic and transport properties of a Weyl semimetal subject to an applied magnetic field. We examine the quantum oscillations in the magnetization to look for signatures that distinguish the Weyl semimetal from conventional phases of matter. We find distinctive sawtooth-like oscillations in the magnetization that reflect the relativistic nature of the bulk bands. The effect of impurities on these signatures will also be discussed.

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