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Kinetic equation approach to chiral anomaly driven magnetoconductivity of Weyl semimetals XAVER NEUMEYER, University of North Dakota, VLADIMIR ZYUZIN, Texas AM University — We study electric field and temperature gradient driven magnetoconductivity of a Weyl semimetal system. To analyze the responses, we utilize the kinetic equation with semiclassical equation of motions affected by the Berry curvature and orbital magnetization of the wavepacket. Apart from known positive quadratic magnetoconductivity, we show that due to chiral anomaly, the magnetconductivity can become non-analytic function of the magnetic field, proportional to 3/2 power of the magnetic field at finite temperatures. We also show that time-reversal symmetry breaking tilt of the Dirac cones results in linear magnetoconductivity. This is due to one-dimensional chiral anomaly the tilt is responsible for.

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