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Photogalvanic effects in Type-II Weyl semimetals, WTe2 and MoTe2[1] SE JOON LIM, Stanford University, CLAUDIA FELSER, Max Planck Institute, AHARON KAPITULNIK, Stanford University — For homogeneous systems with broken inversion symmetry, a direct current can be generated under uniform illumination due to the transfer of angular momentum and linear momentum of photons. In this study, we experimentally look at the photogalvanic effect in Weyl semimetals with broken inversion symmetry. In particular, the recently discovered Type-II Weyl semimetals, WTe_2 and $MoTe_2$, with C_{2v} symmetry group are studied under oblique illumination of elliptically polarized light. We measure the response in directions both perpendicular and parallel to the W-chain (Mo-chain), and we are analyzing the contributions from various effects including the photon drag effect which arises from the transfer of photon momentum.

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