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**Photocurrents in Weyl semimetals** CHING-KIT CHAN, Massachusetts Institute of Technology and University of California Los Angeles, NETANEL H. LINDNER, Technion, GIL REFAEL, California Institute of Technology, PATRICK A. LEE, Massachusetts Institute of Technology — The generation of photocurrent is symmetry-forbidden in two-dimensional Dirac electronic systems with inversion symmetry. In sharp contrast, we show that three-dimensional Weyl semimetals can generically support significant photocurrents due to the combination of inversion symmetry breaking and finite tilts of the Weyl spectra. We will explore the symmetry properties, chirality relations and various dependences of this photovoltaic effect on the system and the external light source. Our results suggest that noncentrosymmetric Weyl materials can be advantageously applied to room temperature photodetections of mid- and far-infrared radiations.

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