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A method to generate isolated half-cycle XUV/x-ray pulses[1] HUI-CHUN WU, Los Alamos National Laboratory, JUERGEN MEYER-TER-VEHN, Max Planck Institute for Quantum Optics — In the recent paper [**Wu & Meyer-ter-Vehn, Nature Photon. 6, 304 (2012)**], we show that single powerful (∼terawatt) half-cycle XUV/x-ray pulses can be produced when irradiating a double foil target with intense few-cycle laser pulses. Focused onto an ultrathin foil, all electrons are blown out, forming a uniform sheet of relativistic electrons. A second layer, placed some distance behind, reflects the drive beam but lets electrons pass straight through. Under oblique incidence, light reflection provides the transverse current in the electron sheet, which emits intense half-cycle pulses. These half-cycle attosecond pulses can be used to control electron motion in materials and explore nonlinear XUV/x-ray optics.

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