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Title:Observation of energetic terahertz pulses from relativistic solid density plasmas
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Abstract:We report the first experimental observation of terahertz (THz) radiation from the rear surface of a solid target while interacting with an intense laser pulse. Experimental and two-dimensional particle-in-cell simulations show that the observed THz radiation is mostly emitted at large angles to the target normal. Numerical results point out that a large part of the emission originates from a micron-scale plasma sheath at the rear surface of the target, which is also responsible for the ion acceleration. This opens a perspective for the application of THz radiation detection for on-site diagnostics of particle acceleration in laser-produced plasmas. © IOP Publishing Ltd and Deutsche Physikalische Gesellschaft.
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