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Abstract:Intense femtosecond laser-plasma interactions can produce high power terahertz radiations. In our experiment, the polished copper target was irradiated by a p-polarized laser with intensity of more than 1018 W/cm^2 at an incident angle of 67.5^o; from the target normal. The THz energy from three different detection angles is measured. The maximum emission is found in the direction at an angle of 45^o; to the laser backward direction, which is more than one order of magnitude higher than in the other two directions. A simple theoretical model has been established to explain the measurements.
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Inspec controlled terms:copper - high-speed optical techniques - plasma interactions - plasma production by laser - submillimetre wave generation
Uncontrolled terms:angular distribution - terahertz emission - laser interactions - solid targets - femtosecond laser plasma interactions - polished copper target - p-polarized laser - detection angles - laser backward direction
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