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Title:TERAHERTZ EMISSION FROM TARGET UNDER THE ACTION OF POWERFUL LASER PULSES
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Abstract:The target irradiated by high intensity (10(18) ... 10(19) W/cm(2)) short (10 ... 100 ps) laser pulses generates plasma and electron emission from plasma produce virtual cathode. Virtual cathode oscillation leads to power generation in a THz range. This generation mechanism has been studied by numerical simulations using a relativistic electromagnetic PIC code and appears to be very similar to those of usual vircator. However plasma ions result in not only additional electron deceleration but electron focusing. Thereof the efficiency of generation in these radiation sources is several times higher compared to that in the analogous traditional vircators. This mechanism can be used for high power THz range radiation sources creation.
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