

Laser ablation thresholds for optical and x-ray lasers

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With the use of two-temperature (2T) hydrodynamics, the effect of radiation from an optical laser and an x-ray laser with the same fluence was compared. The penetration depth of x-ray radiation is larger than that of optical radiation. One would expect that the ablation threshold will be greater for the case of an x-ray laser. Calculations show that after the 2T stage, the temperature profiles under the action of an optical laser and an x-ray laser with a pulse duration that is greater and smaller than for an optical laser are practically the same. As a result, the threshold in the x-ray case is not higher than in the case of optical radiation.

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