

Fast heating of an imploded core under counter beam irradiation by using a repetitive IFE driver HAMA

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- We observed a strong x-ray flash from a shock-imploded core with 70 μm diameter, originally deuterated polystyrene (CD) spherical shell of 500 μm diameter, by counter irradiating 110 fs, 7 TW laser pulses.
- Collisional 2D PIC simulation indicates a possibility that counter hot electron currents generate magnetic filaments in the imploded core due to the Weibel instability. Hot electron in the core region with energy below a few MeV could be trapped in these filaments, supposed to be leading to the bright x-ray emissions as observed.

Mori Y. et al., PRL 117 (2016) 055001.

