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Influence of Target Plasma on Electron Beam Focusing in LIA

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Performance of flash radiography system requires high spatial resolution. To produce point-like source of x-ray radiation electron beams focused on high-Z material are used. The target material is strongly heated by an electron beam with power deposition about of 1 kJ/mm³. Dense plasma is formed that affects the beam via neutralization by fast ions and ionic instabilities. In this work we present theoretical and experimental study of beam defocusing by target plasma in LIA [1].

[1] Starostenko, D. A., et al. Results of operating LIA-2 in radiograph mode// Physics of Particles and Nuclei Letters, 11.5, 660-664 (2014).

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