Observation of 18 MeV electron beam spot dynamics and accompanying disassemble of target in double pulse mode of LIA

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This report describes well known problem of beam-target interaction in multi pulse mode of linear induction accelerator (LIA) [1, 2]. Electron beam (18 MeV, 1.5 kA, 150 ns, double pulse) focused into millimeters spot size on a tantalum plate with a thickness of 1 to 3 mm was studied. The basic diagnostics are described, especially the multi-pixel detector [3] based on a scintillation fiber (decay times 3 ns). First experimental data are considered and hypothesis of beam-plasma interaction is discussed.

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[3] Trunev Y A, Skovorodin D, Burdakov A, Popov S, Kolesnikov P, Danilov V, Kurkuchekov V, Atlukhanov M, Kulenko I, Arakcheev A *et al.* 2020 *IEEE Transactions on Plasma Science* **48** 2125–2131