ALUMINUM K-LINE RADIATION SOURCE TOPOLOGY IN Z-PINCH EXPERIMENTS WITH EXPLOSIVE MAGNETIC GENERATOR

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Investigation of powerful fluxes of soft-X-ray radiation (SXR) at the implosion of multi-wire cylindrical arrays has been carried out in RFNC-VNIIEF for many years. The arrays are powered from laboratory and explosive current sources. With current amplitudes 5-5.5 MA and implosion times 0.75-1 microseconds in experiments with an explosive-magnetic generator (EMG), equipped by an explosive opening switch (EOS), the efficiency of generating a K-line of aluminum was 35 percent of the total radiation energy, which is comparable to the results obtained on the Saturn facility with a Z-pinch implosion time 80 ns, and significantly higher than the efficiency of generating a hard radiation component on the Sphinx facility with an implosion time 800 ns. This work provides the numerical studies of the aluminum K line radiation source topology in Z-pinch experiments with EMG performed within the framework of the radiation magnetohydrodynamic codes FLUX-3D and FLUX-rz.