

X-ray diagnostics of laser-induced plasma embedded in strong magnetic field with misaligned orientation

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The present work is aimed at the experimental study of the dynamics of laser-induced plasma immersed in a strong poloidal magnetic field with variable orientation (0° – 90° depending on the plasma expansion) and amplitude (up to 30 T). The significance of such studies is especially important for the tasks of laboratory astrophysics and inertial confinement fusion. Electron density and temperature profiles are measured, effects related with plasma collimation, accumulation, as well as separation, generation of instabilities and shocks by the magnetic field are discussed.