Contribution ID: **24** Type: **Poster**

PLASMA PINCH STABILIZATION IN HIGH-CURRENT PULSED PLASMA DIODE FOR DIRECTION EUV RADIATION GENERATION

The work is related to stabilization of the plasma pinch and generation zones of directional EUV radiation by an external strong (up to 30 T) magnetic field in a high-current pulsed plasma diode with a limited working surface of a high-voltage electrode. The estimation of the external magnetic field magnitude which is necessary to stabilize the plasma pinch in the whole discharge stage has been made. The dependencies of the discharge current, discharge active voltage and active power inputted into the discharge under various initial conditions have been obtained. The radiation patterns depending on the geometry of the plasma formations and plasma density have been calculated. It has been shown that the external strong magnetic field stabilizes the plasma pinch and the mode of energy input into the discharge.

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Track Classification: Plasma Physics