

Mean electric field and total near electrode drops measurements for discharge in hydrogen at initial pressure of 32 MPa with current amplitude of 1.3 MA

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Research results for discharge initiated by wire explosion in hydrogen at initial pressures of ≈ 32 MPa and current amplitudes of ≈ 1.3 MA between steel electrodes are presented. The new data enlarge the results of researches on this topic continuing from [1]. Mean electric field in discharge channel and mean near electrode voltage drops were determined in an experimental series with steel electrodes for different interelectrode gaps from 1 to 2 cm at the time of current maximum. The near electrode voltage drop was of ≈ 3.5 kV and electric field strength in the discharge channel was of ≈ 0.7 kV/cm at this conditions.

- [1] Bogomaz A A, Budin A V, Pinchuk M E, Rutberg P G and Savvateev A F 2005 *Physics of Extreme States of Matter—2005* (Chernogolovka: IPSP RAS) pp 214–6