Electric characteristics of high-current high-pressure discharge with current amplitude of 400–1400 kA at initial pressure of 5 MPa

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The generalized volt-ampere characteristic relation for high-current, high-pressure pulsed electric discharge is discussed. The characteristics of the formation of a current channel, taking into account the magnetic pressure at changes of the current strength, are presented. Experimental data for discharges in hydrogen with current 400–1400 kA at initial pressure of 5 MPa are considered [1, 2]. Attention is paid to the dependencies of the voltage drops near the electrodes and the field in the discharge channel at the change of the current value.

[1] Bogomaz A A *et al* 2019 *XXXIV Int. Conf. on Interaction of Intense Energy Fluxes with Matter* (Moscow & Chernogolovka & Nalchik: JIHT RAS) p 336

[2] Pinchuk M E *et al* 2022 *XXXVII Int. Conf. on Equations of State for Matter* (Moscow & Chernogolovka & Nalchik: JIHT RAS)