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Authors:Bratman, V.L. (1); Zorin, V.G. (1); Kalynov, Yu.K. (1); Koldanov, V.A. (1); Litvak, A.G. (1); Razin, S.V. (1); Sidorov, A.V. (1); Skalyga, V.A. (1)
Author affiliation:(1) Institute of Applied Physics, Russian Academy of Sciences, Nizhny Novgorod 603950, Russia
Corresponding author:Bratman, V.L.
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Abstract: The results of experiments aimed at the study of the discharge in a focused beam of terahertz waves in argon under near-atmospheric pressures are presented. The range of electric fields and gas pressures, at which a breakdown occurs, is determined. The study of the discharge glow dynamics showed that the discharge starts at the maximum of the terahertz wave beam field and its front moved towards the radiation with the speed of about 105 cm/s into the region of the fields being significantly weaker than the breakdown value. Measurements of the ratio of wave transmission through the discharge allow one to conclude that the density of the plasma produced in the discharge exceeds 1015 cm−3. Some features of the terahertz discharge are discussed
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