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Plasma parameter measurements in a small-size atmospheric plasma jets ALEXEY SHASHURIN, MICHAEL KEIDAR, The George Washington University — Recently a great attention is attracted to the creation of the small size atmospheric plasma jets and their interaction with living tissue. This facilitates the development of appropriate tools for diagnostics of plasma parameters in small-size plasma jets. Two main diagnostic tools are traditionally utilized for jet characterization, namely, photographing by intensified charge-coupled device (ICCD) cameras and optical emission spectroscopy. It is observed that streamer (“plasma bullet”) propagating along with gas flow is generated immediately after the breakdown. Recently a new method for temporally resolved measurements of absolute values of plasma density in the plasma column of small-size atmospheric plasma jet utilizing Rayleigh microwave scattering was proposed. In this work we present a new method for measurements of plasma potential in the jet. Method utilizes application of external electrostatic fields to control propagation of streamer. The distribution of plasma potential along the jet was determined.

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