Abstract Submitted
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Radially resolved spectroscopic analysis of positive streamers under transient luminous events conditions[1] VACLAV PRUKNER, Institute of Plasma Physics AS CR, v.v.i., Department of Pulse Plasma Systems, Za Slovankou 3, 18200 Prague, Czech Republic, TOMAS HODER, Leibniz Institute for Plasma Science and Technology - INP Greifswald, Felix- Hausdorff-Str. 2, 17489 Greifswald, Germany, MILAN SIMEK, Institute of Plasma Physics AS CR, v.v.i., Department of Pulse Plasma Systems, Za Slovankou 3, 18200 Prague, Czech Republic — The Transient Luminous Events (TLE) are huge electrical discharges appearing at the upper atmosphere. Sufficiently spatially and temporally resolved spectroscopy is currently one of the very few methods how to get closer to the basic TLEs parameters. In this study, triggered positive streamers were operated in volume barrier discharge with 4 cm gap fed with synthetic air at pressures between 8.98 and 0.16 torr corresponding to equivalent TLE altitudes ranging from 30 to 60 km, respectively. Time resolved axial and radial emission profiles of streamer channel were collected by scanning the discharge via fast photo-multiplier and spectral band-pass filters. Depending on different streamer velocities, different widths of the streamers were measured. Obtained data were analyzed in order to estimate values of the streamer head electric field with radial resolution.

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