

## Modeling red sprites with capacitive discharge

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*The work is devoted to the study of the plasma of a pulsed streamer discharge, which is similar in its properties to the plasma of high-altitude atmospheric discharges. A facility has been created for experimental modeling of the red sprites observed during discharges at altitudes of 40–100 km from the Earth's surface. At low atmospheric air pressures, the conditions for the formation of two ionization waves (streamers), which propagate in opposite directions from the plasma region created by the capacitive discharge, are determined. The velocity of the ionization wave front is measured, and the emission spectra and photographs of the discharge are presented. The sprite generation mechanism is analyzed.*

**Keywords:** experimental modeling of red sprites, capacitive discharge in air, emission at pressures of 0.4–3 Torr.

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