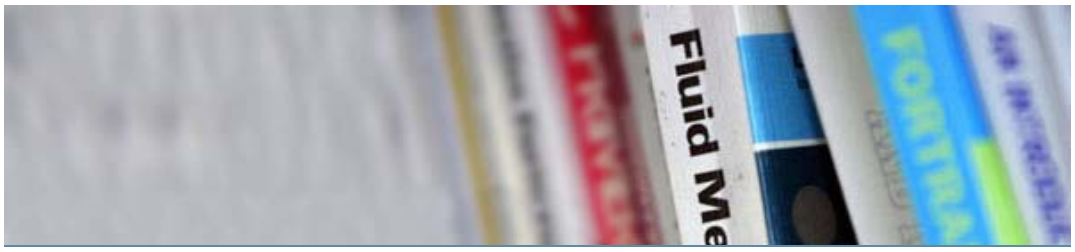

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Quantitative measurements of vaporization, burst ionization, and emission characteristics of shaped charge barium releases

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Résumé / Abstract
Intensity-calibrated color video recordings of three barium-shaped charge injections in the ionosphere were used to determine the initial ionization, the column density corresponding to unity optical depth, and the yield of vaporized barium in the fast jet. It was found that the initial ionization at the burst was less than 1% and that 0% burst ionization was consistent with the observations. Owing to the Doppler shift, the column density for optical thickness in the neutral barium varies somewhat according to the velocity distribution. For the cases examined here, the column density was 2-5×10^{10} atoms/cm^2. This value, which occurred 12 to 15 s after release, should be approximately valid for most shaped charge experiments

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