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Initiatory Electrons in Compressed Gases in Positive Polarity

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Abstract: This paper deals with the nature of seed electron sources in compressed N_2 for positive polarity. We present an experimental procedure that provides evidence of the fact that collisional detachment from negative ions plays the most important role in the supply of seed electrons. Conditioning phenomena in compressed SF_6 , N_2 and air have been simulated under positive lightning impulses for point-plane geometry.

Key Words: Electrical breakdown, seed electron, breakdown probability, conditioning phenomena, time lag, collisional detachment.

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