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Research the Length of the Positive Corona Glow Using the Digital Image Processing Technology QIZHENG YE, YU HU, YI SUN, Huazhong University of Science and Technology — A digital image processing technology presented in our previously paper—gray level histogram obtained by image processing of the discharge—is used to calculate the length of the positive corona glow. The calculated results of the mean gray level, the standard deviation of the gray levels and the coefficient of variation which is the ratio of the standard deviation to the mean gray level, show that the jump location of the coefficient of variation is the end point of the glow and can be used as an index of the length of glow. With an increase of the voltage, the length of glow increases and the positive glow mingles with the negative glow at last. Compared with the other methods, the method is not only effective but also simple in the quantitative analysis the length of the glow.

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