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FILTERING OF NOISES ASSOCIATED TO THE COMMUTATION OF THE DC RECTIFIERS IN PATTERNS φ, q, n OF PARTIAL DISCHARGES

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The measurement of partial discharges is sustained in the detection and filtration of current pulses which appear in a band of frequency that include from the kilohertz up to the gigahertz, for such a reason the partial discharges detectors possess systems for the separation of this current pulses. However, partial discharges detectors also allows the pass of other signals of high frequency, denominated noises, that mix with the pulses of partial discharges and affect the measurements results, as well as the interpretation and characterization of partial discharges. To attenuate that effect, different techniques have been developed to disaggregate the noises associated to the signals, like the existent ones in the q,φ,n partial discharges patterns. In this paper is presented a procedure for identification of the noises associated to commutation of the thyristor, which could affect the q,φ,n patterns, by means of the technical of digital images processing procedure. The studied noises are vertical growths that occupy only a column of pixels and that characterize themselves for an elevated activity of DP. The interest in its elimination comes given for the influence that they can take place on the parameters that characterize the DP and not for difficulties that they introduce in the identification of these three-dimensional signatures presents on patterns q,φ,n. The procedure of developed filtering is conceived to be applied in the noises of interest that had been previously identified. The filtering of the noises of interest and random noises are also illustrated in the present article. Time of identification and filtering of every pattern does not exceed 5 seconds, indicating the potentialities of the digital processing of images in the denoising of the patterns q,φ,n as much for applications On Line as in real time. For the identification of noises it is taken as basis that the magnitude of a determined pixel is related to its nearby pixels, filtering supports itself in statistical operators and every region of interest in processed at the time. The achieved results demonstrate the effectiveness of the shown procedure.

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