

ANFIS Approach for Locating Faults in Underground Cables

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Abstract : This paper presents a fault identification, classification and fault location estimation method based on Discrete Wavelet Transform and Adaptive Network Fuzzy Inference System (ANFIS) for medium voltage cable in the distribution system. Different faults and locations are simulated by ATP/EMTP, and then certain selected features of the wavelet transformed signals are used as an input for a training process on the ANFIS. Then an accurate fault classifier and locator algorithm was designed, trained and tested using current samples only. The results obtained from ANFIS output were compared with the real output. From the results, it was found that the percentage error between ANFIS output and real output is less than three percent. Hence, it can be concluded that the proposed technique is able to offer high accuracy in both of the fault classification and fault location.

Keywords : ANFIS, fault location, underground cable, wavelet transform

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