

## Fault Location Identification in High Voltage Transmission Lines

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**Abstract :** This paper introduces a digital method for fault section identification in transmission lines. The method uses digital set of the measured short circuit current to locate faults in electrical power systems. The digitized current is used to construct a set of overdetermined system of equations. The problem is then constructed and solved using the proposed digital optimization technique to find the fault distance. The proposed optimization methodology is an application of simulated annealing optimization technique. The method is tested using practical case study to evaluate the proposed method. The accurate results obtained show that the algorithm can be used as a powerful tool in the area of power system protection.

**Keywords :** optimization, estimation, faults, measurement, high voltage, simulated annealing

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