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HIGH VOLTAGE TRANSMISSION LINE FAULT CLASSIFICATION BASED ON NEURAL NETWORK TRAINED BY PARTICLE SWARM OPTIMIZATION

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ABSTRACT

The use of neural system way to deal with recognize the fault classification of the transmission lines is led in this review. Fault turned into an essential issue that dependably happen inside the transmission lines. The distinctive fault has been distinguished in the transmission lines and it must be spotted and characterized precisely and effectively. Stability of the system must be maintaining isolated. New approach has been made based on artificial neural network (ANN) for the fault classification. The ANN classifier are tried by various and different sorts, areas, resistances and commencement points. Every one of these factors then will be tried and thought about by Particle Swarm Optimization (PSO) algorithm to the outcomes got. Extension of simulation carried out by MATLAB with the highlight PSO features and advantages over others algorithms that very reliable, fast and efficient. This research has shown that the resulted in the excellent classification performances is extremely accurate and error of performance is decrease when apply the PSO algorithm. The result and performance of machine learning algorithm is proven that the PSO capable to optimizing the solution.

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CHAPTER 1
INTRODUCTION

1.1   OVERVIEW OF THE PROJECT

In an electric power framework containing diverse complex cooperating components, there dependably exist a probability of aggravation and fault. Many types of challenging that the power system network faces such as ageing systems, higher reliability of demands, intolerance of customers, etc. However, faults occur on transmission lines should be classified, located and fixed rapidly. Further relaying modules is used to start the faults detector modules of a transmission line protective scheme. Faults classification give an extra level of security in transferring application too. The fault frequently occurs in transmission lines. Therefore, the maintenance staff that capable to handle this situation must act quickly as possible to restore the electricity [11, 16]. Any of unusual stream of current in power system's components is known as a fault in the power system. These issues cannot be totally evaded since a segment of these faults additionally happen because of common reasons which are route outside the ability to control of humanity. Therefore, it is critical to have a better and excellent protection system that recognizes any sort of unusual flow of current in the power system, recognizes the kind of fault and after that precisely finds the location of the fault in the power system. The faults are typically distributed by devices that identify the occurrence of fault and in the end separate the fault area from whatever remains of the power system.

From recent years, the innovations of computer grow rapidly thus the intelligent based method exist and have been implements for fault location and classification. The primary artificial intelligence based procedure that have at present used as a piece of the power engineering are: