Abstract

The prediction of wind farm output power is considered as an emphatic way to increase the wind energy capacity and improve the safety and economy of the power system. The wind farm output energy depends upon various factors such as wind speed, temperature, etc., which is difficult to be described by some mathematical expression. This paper introduces a method of wind energy prediction for a wind farm of Vietnam based on historical data of wind speed and
environment temperature. Wind energy is free, renewable resource, and non-polluting. This paper consists of the hybridization of the ant colony optimization (ACO), particle swarm optimization (PSO) and Adaline Neural Network (ANN) to predict the hourly wind energy. By applying this hybrid technique over the historical data of wind the MAPE determined is 3.08%.

References


Index Terms

Computer Science  Artificial Intelligence
Keywords
Ant Colony Optimization  Particle Swarm Optimization  Adaline Neural Network
Hybrid.