Abstract

This paper proposes a new approach to real time economic and emission dispatch by using orthogonal least-squares (OLS) and modified particle swarm optimization (MPSO) algorithms to construct the radial basis function (RBF) network. The objectives considered are fuel cost and NOx/CO2 emissions. The RBF network is composed of input, hidden, and output layers. The OLS algorithm provides a simple and efficient means for fitting radial basis function networks. The MPSO algorithm is implemented to tune the parameters in the network, including the dilation and translation of RBF centers and the weights between the hidden and output layer. The proposed approach has been tested on the IEEE 30-bus six-generator system. Testing results indicate that the proposed approach can make a quick response and yield accurate Real
time economic and emission solutions.

Reference

- D. N. Jeyakumar, T. Jayabarathi, and T. Raghunathan, “Particle swarm optimization for

Index Terms

Computer Science          Power Systems

Key words

Modified particle swarm optimization          orthogonal least-squares
radial basis function                        Real time

economic

emission dispatch