

ABSTRACT :

In this paper, we suggest to use the radial basis function neural network in the dynamic behavior characterization of a three tank system. This approach model seems to be more efficient because of its nonlinear characteristics and the ability to cover a large operating space. A hybrid DIRECT algorithm is used in learning of the radial basis function. Contrarily, the optimization process of the radial basis function neural network parameters is altered in a slow manner by considering a tuning algorithm based on a genetic algorithm or on a standard direct search algorithm. The experimental results demonstrate the effectiveness of this approach and its capability to reproduce the dynamic behavior of a three tank system under different situations.