Abstract:
In this paper, a new approach for modeling and faults detection in complex systems is presented. This approach is based on the use of radial basis neural networks with a hybrid learning method between genetic algorithms and Newton method, for modeling the system in question. The obtained model is then used for the detection of different system's faults. The architecture of the used neural networks takes into account the nonlinearity of the system to be modeled. In addition to that, the hybrid learning method (genetic algorithms – Newton method) is used to minimize the learning error within an acceptable time interval. Finally, the proposed approach is applied on the three tank system (DTS-200).