

## **RADIAL BASIS FUNCTION ARTIFICIAL NEURAL NETWORK RAINFALL-RUNOFF MODEL**

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### **ABSTRACT**

Radial basis function artificial neural network (RBFANN) is widely used in many hydrological applications in recent years by many researchers. However, the internal characteristics have been studied very limited. Radial Basis Functions (RBF) neural networks were introduced into the ANN literature by Broomhead and Lowe in 1988. The RBF network model is motivated by the locally tuned response. Radial basis function artificial neural network RBFANN is very similar in topology to the multi layer BPANN. Unlike, multi layer BPANN in which the dimensionality of the data is reduced by projecting a large input space on to a smaller number of hidden units and forcing the data through a bottle neck, the RBFANN does precisely the opposite. This paper investigates about methodology, suitable selection of learning rates (ALR, ALRG) and optimum number of iteration required for the RBFANN to model rainfall-runoff process. The daily rainfall and runoff data from Vamsadhara river basin, Andhra Pradesh of India is used to develop a model.