

# **APPLICATION OF OPTIMAL FILTERING TECHNIQUE FOR ANALYTICAL STREAMFLOW FORECASTING**

## **Abstract**

The main aim of this research is to develop a streamflow forecasting model with the help of the Sacramento Catchment Model and apply optimal filtering techniques to estimate the states. There have been many models in the past for flow forecasting. But most of them could not effectively give the result for a long period of time where the rainfall is infrequent. The Sacramento model is streamflow forecasting model which was effectively useful for the region where the antecedent approach was deficient. The purpose of this research work is to develop and simulate the Sacramento Model in Matlab and then use optimal filtering techniques in order to predict hydrological variables. In general hydrology is the study of the waters of the earth, especially with relation to the effects of precipitation and evaporation upon the occurrence and character of water in streams and lakes, and water on or below the land surface. The Sacramento Catchment Model is the "Generalized Streamflow Forecasting Model" which was developed by personnel at the California-Nevada River Forecast Center. It was developed by Burnash et al in 1973 forecast the river flow in the California-Nevada region where the antecedent approach was deficient.