

Tank Model found to be suitable for predicting daily discharges of tropical subbasins identified as having pronounced sluggish runoff response due to basin storage effect is presented in this paper. Runoff response in the objective basins is highly damped at the onset of rains resulting in hydrographs which are considerably lagging behind hyetographs of causative rainfall. This unique basin-storage characteristic is the reason for referring to the basins as “Hydrologically large”. Simulated hydrographs are in good agreement with observed hydrographs in most years considered, therefore, this study concludes that it is possible to predict daily streamflows in the study area using proposed Tank Model.