

Modified Tank Model which explicitly simulates surface runoff is proposed in this paper. The surface flow as applied here refers to the flow which travels through surface layer. The surface layer is considered as very porous compared to the lower soil layer which is occurrence domain of delayed components. Delayed components of total hydrograph are simulated by conventional tanks. The model is verified in a number of tropical basins located in Kenya and the results compared with previous studies based on Tank Model. The comparison revealed that new tank structure having a provision for surface runoff simulation is effective in improving results.