THESIS

CALIBRATION OF A MATHEMATICAL MODEL FOR GENERATING MONTHLY RIVER FLOWS FROM METEOROLOGICAL DATA FOR A SELECTED CATCHMENT

Submitted by:

Mohamed Saleh Abulohom
(95-PG-WRE-01)

For the Degree of

Master of Science

IN

WATER RESOURCES ENGINEERING

CENTRE OF EXCELLENCE IN WATER RESOURCES ENGINEERING

UNIVERSITY OF ENGINEERING AND TECHNOLOGY,

LAHORE, PAKISTAN

1997

ABSTRACT

CALIBRATION OF A MATHEMATICAL MODEL FOR GENERATING MONTHLY RIVER FLOWS FROM METEOROLOGICAL DATA FOR A SELECTED CATCHMENT

The main objective of this study was calibrating a mathematical model for generating monthly river flows from meteorological data for a selected catchment. The model applied was Pitman model, and the selected catchment was Brandu river catchment in Buner valley of N.W.F.P. Pakistan.

The main input to the model was total monthly rainfall and mean monthly evaporation. The output from the model was simulated runoff volume at the catchment outlet.

In simulating recorded data by means of this model, the major aim is to produce a runoff sequence having the best estimate of the similar characteristics of long term runoff behavior. the short term record of runoff are not considered proper for the design and planning of water resources projects. A 10 years of recorded data (1971-1980) of the selected catchment was used for calibration of the model. Another 9 years of the recorded data (1981-1989) was used for validation of the model.

Based on the results achieved it was concluded that recorded runoff data is simulated well by the model when considering it for long-term runoff behavior.

Engr. Mohamed Saleh