

Synthetic Daily Flow Duration Curves for the Çoruh River Basin, Turkey

Authors : Ibrahim Can, Fatih Tosunoğlu

Abstract : The flow duration curve (FDC) is an informative method that represents the flow regime's properties for a river basin. Therefore, the FDC is widely used for water resource projects such as hydropower, water supply, irrigation and water quality management. The primary purpose of this study is to obtain synthetic daily flow duration curves for Çoruh Basin, Turkey. For this aim, we firstly developed univariate auto-regressive moving average (ARMA) models for daily flows of 9 stations located in Çoruh basin and then these models were used to generate 100 synthetic flow series each having same size as historical series. Secondly, flow duration curves of each synthetic series were drawn and the flow values exceeded 10, 50 and 95 % of the time and 95% confidence limit of these flows were calculated. As a result, flood, mean and low flows potential of Çoruh basin will comprehensively be represented.

Keywords : ARMA models, Çoruh basin, flow duration curve, Turkey

Conference Title : ICCABE 2015 : International Conference on Civil, Architectural and Building Engineering

Conference Location : Copenhagen, Denmark

Conference Dates : June 11-12, 2015