

The main purpose of this study was to develop an optimum flow prediction model, based on data mining process. The data mining process was applied to predict river flow of Seyhan Stream in the southern part of Turkey. Hydrological time series modeling was applied using monthly historical flow records to predict Seyhan Stream flows. Seyhan Stream flows were modeled by Markov models and it was seen that it adapted AR(2). Hence, F_{t-2} and F_{t-1} flows in (t-2) and (t-1) months were the taken inputs. For monthly streamflow predictions, data were taken from the General Directorate of Electrical Power Resources Survey and Development Administration. Used data covered 35 years between 1969 and 2003 for monthly streamflows. Furthermore, for the effect of monthly periodicity in hydrological time series $\cos(2\pi_i/12)$, $\sin(2\pi_i/12)$ ($i = 1, 2, \dots, 12$) were included as inputs. Then, F_t flows in (t) months were modeled by data mining process. It was concluded that with using data mining process for streamflow prediction, it was possible to estimate missing or unmeasured data.

Keywords: AR models; data mining process; flow prediction