

Assessment of the effects of climate variability on the hydrological behavior of Mond basin

Abstract:

Climate variability and land use change are the two major factors affecting the hydrologic behavior of large catchment areas. Hydrologists have always been a big problem in the identification of more effective factor between these two factors. MOND basin has covered a very wide area of the Fars province and not only Spatial and temporal variability of the climate in this area is very strong but also changing land use in the watershed is high. In order to comprehensive management of this watershed a good understanding of hydrologic behavior of the watershed is necessary. In this study, have investigated the effects of climatic variability on the hydrologic behavior of the MOND basin by using statistical analysis and hydraulic modeling approach. Results showed that, despite the changes in the flow regime of the basin, the rainfall has not been seen many changes. However, the average annual and seasonal temperature trends and changes in the watershed were increased. The large variability in rainfall and atmospheric circulation linking results also indicate very little effect on these circulations on the rainfall regime. Therefore, the results indicate a weak influence of climatic variability on the hydrologic behavior of this basin. Hydrological modeling results also evidenced to this fact because there was a significant difference between the the simulated runoff and observed runoff.

Key words: Statical Analyse, HBV model, Rainfall-runoff simulation, Mond basin



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