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INTENSITY DURATION FREQUENCY CURVES FOR SINAI PENINSULA, EGYPT

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ABSTRACT

Climate change is one of the most important parameters affecting the water resources. It can be considered as a long-term change. It obviously affects the whole hydrologic cycle, therefore it causes a variation in rainfall intensity, duration and frequency of precipitation. Many regions in Egypt need to create or update their rainfall characteristics as a result to the climate changes (e.g. **I**ntensity **D**uration **F**requency **IDF**). This study aims to create a new IDF curve of Sinai Peninsula using the available methods of recurrence period (California, Hazen, Kimball and Gumbel) with Sherman formula. Field data is used to build the statistical equations of IDF curve. Data was collected by Water Resources Research Institute (WRRI), National Water Research Center (NWRC), Egypt. It was found that both California and Kimball methods are more accurate than the other methods compared to the local field data. In addition, both methods have the same outputs. Finally the contour maps of Sherman coefficients of Sinai Peninsula have been developed and calibrated.

KEYWORDS: Climatic Changes, Intensity Duration Frequency Curves, Return Periods, Wadi Sudr, Sinai Peninsula