

Rainfall Analysis in the Contest of Climate Change for Jeddah Area, Western Saudi Arabia

Authors : Ali M. Subyani

Abstract : The increase in the greenhouse gas emission has had a severe impact on global climate change and is bound to affect the weather patterns worldwide. This climate change impacts are among the future significant effects on any society. Rainfall levels are drastically increasing with flash floods in some places and long periods of droughts in others, especially in arid regions. These extreme events are causes of interactions concerning environmental, socio-economic and cultural life and their implementation. This paper presents the detailed features of dry and wet spell durations and rainfall intensity series available (1971-2012) on daily basis for the Jeddah area, Western, Saudi Arabia. It also presents significant articles for combating the climate change impacts on this area. Results show trend changes in dry and wet spell durations and rainfall amount on daily, monthly and annual time series. Three rain seasons were proposed in this investigation: high rain, low rain, and dry seasons. It shows that the overall average dry spell durations is about 80 continuous days while the average wet spell durations is 1.39 days with an average rainfall intensity of 8.2 mm/day. Annual and seasonal autorun analyses confirm that the rainy seasons are tending to have more intense rainfall while the seasons are becoming drier. This study would help decision makers in future for water resources management and flood risk analysis.

Keywords : climate change, daily rainfall, dry and wet spell, Jeddah, Saudi Arabia

Conference Title : ICWES 2015 : International Conference on Water and Environmental Sciences

Conference Location : Kuala Lumpur, Malaysia

Conference Dates : August 24-25, 2015