عنوان مقاله:

Multiple linear regression modeling of precipitation for spatiotemporal drought assessment

محل انتشار:

اولین دوره همایش ملی مدل سازی وفناوری های جدید در مدیریت آب (سال: 1397)

تعداد صفحات اصل مقاله: 14

نویسندگان:

zahir nikraftar - *Department of Geomatics Engineering, Shahid Rajaee Teacher Training University, Tehran, Iran*

abdorrahman mostafaie - *Surveying Department, Faculty of Engineering, University of Zaboh, Zabol, Iran*

mohammad akbari - *Department of Civil Engineering, University of Birjand, Birjand, Iran*

خلاصه مقاله:

Precipitation records from 110 stations over Iran revealed that areal mean annual precipitation decreased with various magnitudes over the country. Precipitation magnitude decreases from north-west along the west part of country by as much as 300 mm on average in 2008-2009 years. In this study elevation and longitude has been chosen as most influential parameters which have highest spatial correlation with precipitation. Results implies that during the years with minimum precipitation the precipitation shortage was greater at high elevations in the north-west and western part of Iran and the precipitation excess during the year with maximum precipitation was greater in this parts too. Spatially Normalized Standardized Precipitation Index (SN-SPI) applied to asses the spatial and temporal distribution of droughts for the period of 1990 to 2010with the aim of investigating the drought conditions of six main hydrologic basin of Iran. The results showed that severe droughts occurred around the year 2004–2009, with a duration of up to 5 year. Multiple linear regression (MLR)modeling of precipitation in conjunction with cluster analysis of drought duration exhibits the linkage between precipitation, droughts and geographical factors. This connection between spatial precipitation distribution and geographical parameters provides an important clue for the respective spatial drought pattern. The above findings on the spatiotemporal drought distribution will update the current drought management plans by developing more precise drought warning systems

کلمات کلیدی:

Drought indices, Precipitation, Iran