Morphometric Analysis of Landslides of the Ekbatan Dam Watershed and Estimation of their Sediments

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Abstract:

The watershed area of Ekbatan dam with an area equal to 22155 ha has located in the northern front of Alvand mountainous in Hamadan province and in a distance of 10 km from Hamadan. In this area landslides have a very specific morphological role and have caused the bareness of the skirts. According to the field examinations and air photography seven cases of land slides have been registered which had specific dispersion in the region. Examinations show that most of the landslides are shallow and over the surface. Collection of surface sediments mostly of sands and gravels in some regions specially depositing pits which are suitable places for the creation of slides. Increase in the stress and increase in the cut stability under different factors cause increasing cuts and land slides in the said pits. Quantity analysis of the slides through morpho metric indicators such as depth indicator, expansion, narrowness, displacement etc. are the representatives of surface slides. Almost all of the landslides in the region are in equilibrium which show the main part of the stable materials from the first site. The increased amount of D/L ratio represents the side expansion and the width change shape of the materials and the estimation of L/D, W/D, and L/W show the direct effect of the slope in creation of landslides. Results showed that changes in the length of slides have been severe and it is more severe in case of length change which with characteristic represents a surface equal to 26668.76 2m and a volume equal to 60517.7 3m, which shows a surface equal or more that 44 cm. In the level of the region they are erupted through the landslides. Therefore slides have an important role in displacement of the materials in the skirts and creating stability and also by creating sediment and leaving it to the rivers of dam region causes the transition and gathering of sediments in the dam and reduction of the Ekbatan dams life.

Keywords: Landslide, Morphometry, Morphogenic, Morphometric Index, Ekbatan Dam.

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Visual Order in Iranian Traditional Urban Planning Case study: Tabriz Baazar

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Abstract:

Iranian past architecture and urban planning, because of its creativity and sustainable features, has a specific location, but in contemporary age, due to various factors, especially following western industrialized features, separated from its origins and sometimes has been declined.

New methods, by neglecting the past and without considering traditional ideas, have changed national and cultural features of the country. Spiritual principles of Iranian traditional urban planning have originated from its ideas and culture. Order as a spiritual principle, represented clearly in Iranian traditional urban planning, so it can be a strong base for the continuity of this rich culture. Baazar, as one of the important spaces in Iranian traditional cities, reflects clearly the principle of order. In this paper, based on library studies, by representing a clear meaning of order and studying this principle in the structure of Baazar as an important and basic structure of traditional cities, the necessity of reviewing the principles of traditional cities, especially their application in contemporary urban planning, has been emphasized. This paper, by emphasizing on the Bazaar, focused on the concept of order. The aim of this paper is recognition some parts of traditional principles to meet the needs of modern urban spaces. This paper represents a clear conceptual meaning of order, as an important factor in the formation of traditional cities, related concepts, effective factors and origins of its formation in Iranian traditional cities. This paper put emphasis on the use of the principle of order in urban planning for the promotion of the quality of modern urban spaces.

Keywords: Visual order, Tradition, Traditional architecture, Traditional urban planning, Baazar.

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The Effects of Oman Sea Surface Temperature Anomalies in Autumn and Winter Precipitation of Southeast Coasts of Iran

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Abstract:

The sea surface temperature (SST) variations play a very important role in the creation and maintenance of climatological and oceanographic processes such as heavy precipitation and subsequent floods, large-scale sea level fluctuations and tropical cyclones.

In this paper the effects of Oman sea surface temperature (SST) on the autumn and winter precipitation of its northern coast, were investigated.

The SST data was obtained from NCEP archives based on 4 points averaging nodes in Oman sea surface using GRADS software. Also the climatic data of 3 stations of Iranian coast (Chahbehar, Jask and Bandar Abas) were used.

The warm (Rw), cold (Rc) and normal (Rb) periods of Oman SST were explained and the median of precipitations in each periods is calculated. The Rw\Rb, Rc\Rb and Rc\Rw ratios were used for evaluating the effects of these conditions on the precipitations anomalies on the coast.

The results shown that the spring warm (cold) SST conditions in Oman sea can decrease (increase) precipitation in the selected stations of regions. Also the winter and autumn precipitation on northern coasts is remarkable, being synchronous to positive anomalies of summer SST.

For considering the mechanism of the effect of Oman sea surface temperature on coastal precipitation, the stream lines, relative humidity and Omega maps were prepared and used. The results showed that the SST effects on stream lines and relative humidity on sea surface are the major mechanisms of precipitation anomalies. Generally during higher precipitation periods, the streamlines over the sea are navigate a longer route and therefore the moisture contents of rainfall systems and ascending currents are suitable for precipitation.

Keyword: Sea Surface Temperature, Oman Sea, Southeast Coasts of Iran, Stream lines, Relative humidity.

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An Analysis and Assessment of ICT and its Role in Urban Planning and Management: A Case Study of Central District of Esfahan

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Abstract

The current paper attempts to examine information and communication technology (ICT) in Esfahan's central district. The research method is applied-developmental and the study method is survey-documental. To collect data, questionnaires were used and SPSS was used for analyzing data. The samples were selected from residents of Esfahan central district and its size was estimated 322 by Cochran method. Ultimately 400 questionnaires were provided from citizens and institutes. Findings show that there is a signficant relationship between information literacy and acceptance of ICT (correlation=0.47, Sig=0.000) that is to say, citizens do not have necessary knowledge to make use of ICT. Accessibility to ICT services in workplace (Sig=0.000) was suitable but in residencies, the case was not true (Sig=0.02). Citizens mostly fulfill their requests personally. The more the satisfaction of citizens with urban managers' services, the more is involvement of citizens in urban management (correlation=0.43, Sig=0.000). There is a relationship between the use of ICT and the extent of citizen participation in urban management (correlation= 0.46, Sig=0.000). The more citizens were satisfied with ICT services, the more they tend to make use of these services. The results of current research is with the correlation of sig=0.031 are average downwards and it demands the care of urban managers. Finally, in order to promote this technology in urban societies, suggestions are presented.

Keywords: Information and Communication Technology (ICT), Urban Management, SPSS, Central District of Esfahan.

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Evaluation of Meteorological Drought Effects in the Reduction of Ground Watertable (Case study: Tabriz Plain)

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Abstract:

Tabriz plain has located in east of Urmia lack. In certent decades alternate and continued droughts have occured in the region and Tabriz plain. Contemporary ground watertable has decreased greatly. Therefore it seems there is a significant interaction between meteorological drought and fall of ground watertable. The goal of this study is to do research on drought, to find precipitation trend, analyze groundwater hydrograph and the evaluation of meteorological to drought effects in the reduction of ground watertable using SPI index and bivariate regression in Tabriz plain. For this purpose, we used meteorological data (monthly precipitation) of Tabriz plain station for the time period 1351-1383 for determination of drought periods. Monthly data of watertable from observation and piedzometry wells for the 1370-1383 were used for the representation of ground watertable variation, by the use of Arc/GIS, Arc/View, Excel and Surfer. The results show that in recent decades precipitation trend has been negetive. Also ground watertable has decreased and the watertable has fallen around 3.94 m in time period of 1370-1383. Groundwater drought relative to meteorological drought occurs two months later in Tabriz plain.

Keywords: Meteorological drought, Groundwater drought, Reduction of watertable, Hydrograph analysis, Tabriz Plain.

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Prepration and Assessment of Rainfall Depth-Area-Duration Curves in Esfahan Province

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Abstract:

Flood risk estimation is one of the most important subjects for hydrologists and other scientists. The main objective of flood risk estimation is to study the past events in order to foresee the future flood risk. There are various methods for flood risk estimation. Rainfall- runoff and empirical equations are among the most used methods. In these methods, rainfall is the main parameter influencing flood mechanism. In this research, spatial distribution of rainfall pattern in Esfahan province is studied. Esfahan province with 10.5 million hectars of area has located in the central part of Iran with different topography, climate and ecological condition. Over 203 rain-guages located in the study area and its neibourhood were studied. The duration base of data record was 33 years. A total of 1654 storm events with less than 1 hour to 72 hours duration were considered, in which three index events, i.e. widespread and maximum events were used. The common methods of geostatistics, Krigging, Co-Krigging, IDW and TPSS were applied to interpolate the recorded points to non-observed ones. Among the studied interpolating methods, Krigging shows the best results, from which the Gussian and spherical models best fits to the observed points. In order to gain the best results, it is recommended to add the number of rainfall guage sites according to the World Meteorological Organization (WMO) standards. Also, we propose grouping the study area into homogeneous regions and studying DAD in each homogeneous region is advised.

Keywords: Esfahan Province, Iran, Pervasive rainfall, Short duration rainfall events, Rainfall duration, Flood, Geostatistics.

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The Importance of Geo-hiking Maps in Management of Geomorphosites of Iran, Case Study: Geomorphosite of Payam Pass

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Abstract:

Geo-hiking tourism, which combines sport activities and appreciation of geological-geomorphological aspects of nature, is today one of the main recreational and economic activities among the markets which will experience a great increase in the near future. This paper presenting Payam Pass in northwest of Iran (38°17′05″-38°55′52″N and 45°46′13″-45°59′12″E) as a geomorphosite, illustrates a methodology to develop a thematic map, namely, the "geo-hiking map". These maps emphasize the landscape elements that the tourist can recognize and observe, as well as the possible hazards. Payam Pass has a strong geo-hiking-tourism vacation merit (its spectacular high-mountain landscape, dense network of hiking tracks, springs, winter sports possibilities, country climate). Thus, the study area shows geomorphological hazard levels of mass wasting, snow and rock avalanches, and aggradational and deggradational activities of rivers. The results emphasize and propose for the people in charge and planners to provide the geo-hiking maps for all gomorphosites of Iran. This study could represent an important instrument for a responsible and safe utilities of high-mountain tourist areas.

Keywords: Geo-hiking maps, Geomorphosites, Geomorphological hazards, Geo-tourism, Payam Pass.

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Geomorphological Characteristics of Ain Mud Volcano and Determination of Mineral Composition of its Water and Mud by Utilizing Physical and Chemical Analysis Methods

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Abstract:

Ain mud volcano, lying 24 km off the Kahir village and in the coastal plain of Oman Sea, is one of the unique geomorphological phenomena in the of Sistan & Baluchestan Province. This "pool like" mud volcano, unlike most of the mud volcanoes being cones, is elliptical in shape having a main diameter of 52 m and the small diameter of 42 m. The activity of this mud-volcano takes place in such a way that on times, when the pool is filled with mud-water (a mixture of mud and water), the surplus mud -water exits through the southern edge of the volcano in the form of streaming mud which then reaches a farther point off the volcano. The outpouring of mud from this volcano is usually smooth but occasionally outpourings become severe with bursting extrusion of viscous mud in great quantity. The exuding gas of this mud volcano is methane. Since no exclusive study on this mud volcano has been carried out so far, hence to cope with the shortage of library sources, efforts would be made in this article to make maximal use of the field and laboratory investigation so that, in addition to the examination of geomorphic and morphometric phenomena, and similarly in connection with the identification of the composition and also the exuding water-mud from the mud volcano, necessary steps must be taken in order to identify and introduce, for the first time and through such means, some of the aspects of this mud volcano that have hither to remained unexplored. Therefore, three samples of water and mud from the mud volcanoes in the dates 82.11.16, 84.9.21 and 84.12.26 were prepared using different chemical and physical analysis such as XRD, BET, TGA, DSC, and FAAS to determine the mineral composition testing and analysis was carried out.

Keywords: Pool-Like, Mud Volcano, Streaming Mud, Mud-Water, Mineral Composition of Mud and Water, Geomorphic and Morphometric.

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