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The Effects of Geology in Hirmand River Direction and Its Historical Role in Habitations Transposition in Sistan

The Hirmand river is a vital lifeline of Sistan which Sistan's life completely depends on continuation flow of Hirmand river. Herodotus byword if "Egypt is as Nile river gift", accept Sistan's field civilization owe to Hirmand river. This river had veered its direction as satellite illustrations prove. Also historical resources has been mentioned these veered directions of hirmand invite by destroying cities, villages and sometime the whole previovs civilizations. Thus this river is influential on destroying civilization like shaping, growing and developing civilization in this district. This present research is mentioned to various reasons of geology in cluded simplicity of erosive and precipitation which are related to texture and soil nature of the field, tectonic factors which had made Hirmand change directions through the history and spatial effect of the earth. The conclusion of this research shows that erosive factors are more noticeable than the others, because existence of levels and sandy-grit with fine aggregate, less viscosity and erosive between clay fine aggregate of alternation layers and silty surface layers.
However one of the efficacious agents in erosion simplification and movements of Hirmand river is divergence of soil beside fold growth in stone- foundation. Besides these factors the role of severe winds in this area and human activities are completely clear.

Keywords: Ghange Direction, Hirmand River, Precipitation, Boundary Changes, Rural Habitation, Tectonic.

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Classification of Temperature Regime of Iran Using PCA and CA

In this study for searching the tempo-spatial patterns and classification of monthly temperature regimes of Iran during the last half century has been analyzed using Principal Component Analysis and Cluster Analysis (CA).Analysis among the Empirical Orthogonal Functions (EOF) from principal component analysis is a powerful tool to detect temporal and spatial patterns of climatic variables. Principal component analysis may result to some empirical modes representing climatic tempo-spatial patterns. Additionally this method approach to decline the mass: of data and convert primary variables into several components which can illustrate the most effects of primary variables.
A principal component analysis applied to correlation matrix of temperature data as a data reduction technique. It showed that three principal components explain about 99.7 percent of variance. The first principal component explains about 95.3 percent of variance. This component dominates southern parts of the country from Khuzestan to Chabahar shows completely different characteristic in compare with another region throughout the year. This study showed that principal component analysis is a useful tool for detecting temperature regimes in Iran.
A cluster analysis on principal component scores resulted to three main temperature regions in Iran. This includes mountainous region, lowland and foothill region and south region.

Keywords: Classification, Principal Component, Analysis Temperature Regime, Cluster Analysis, Iran.

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Investigation of Human Development Index in Sistan & Balouchestan Province (1989-2000)

Recent events in Sistan and Balouchestan province have special roles in human development of this province. Whereas in the past 11 years in this province human development index rose from 0.336 in 1989 to 0.569 in 2000. Also human development index adjusted gender rose from 0.296 to 0.451 and human poverty index decreased from 49.63 to 32.66, but unfortunately this province has great distance yet to average of country. That is mentioned to hidden high capacity that can be used.

Keywords: Human Development Index, Gender-Related Development Index, Gender Empowerment Measure, Human Poverty Index, Sistan&Balouchestan Province.

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The Weathering Processes and Their Effects on City and Rural Districts The Mountainous Regions of Azarbaijan

In mountainous regions rock slopes are disconnected by dynamic activities of weathering processes, then, they move to foothill, through the gravity force and mass movements processes of materials which are located on hillsides in different shapes. These processes cause serious damages to settlements (city and village),of foothill parts so that sometimes, they lead to destroy a part of city or all of prosperous state.
This study, based on field observations, air photographs analysis, quantitative and experimental methods, using of Autocad map 2000, Arc/view softwares, with classification of various weathering regions of Azarbaijan (weathering severity) based on climatic variables and description map, with evaluation of weathering processes mechanization (especially mechanical destruction) shows the morphological role of those factors in civic and rural parts instability in mountainous regions of Azarbaijan.
The results of the study indicate that the mechanical weathering has important role on the slopes instability and mass movements in Azarbaijan regions. The weathering processes threat city and rural districts, kinds of forms, such as falls, rock downfall and debris flows. So it must be notice to hazards of the weathering processes on the projects relative to rehabilitation of damaged areas, location of new cities and towns, excursion villages construction of road networks and industrial establishments.

Keywords: Weathering processes, mechanical destruction, Mass movements, mountainous regions of Azarbaijan.

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The Great Sistan's Ascending and Descending Hrmaunotical Analysis

The Great Sistan is a vast expanse which, nowadays, a relatively wide portion is in Iran and Afghanistan, and an insignificant part lies in Pakistan. This expanse has had many ascendants and descendants as a geographical unit during its life (the establishment of human settlements). For example, it has been able to present one of the most brilliant human achievements (civilization and culture) which is known as "the Burnt City",that faced elimination in 1800-2100 B.C. Then after a relatively long historical recession, the primary nucleus of Zaranka, the Achaemenidian city (Dahaneh- Gholaman) was founded in 6the century B. C. This civilization faced a gloomy destiny after two thousand years (it is largely known as Zaranj city) by Taymour Lane's attack in 785 D. H. and then his son Shahrox, in D. H. Hijra, and went on decadence, so that this homeland hasn't seen happy days after this date.
The result of this research shows, it had, ascendants and descendants in each one of the two historical sections namely, beginning of the history with "the Burnt City" symbol and the historical period with Zarang symbol. Although a set of factors, forces and trends were involved in these ascendants and descendants, interaction with the neighboring civilization domains and exchanges were major factors which we faced a prosperous Sistan or vice- versa a weakened Sistan, the revitalization of Sistan is dependent on this principle.

Keywords : Hrmaunotical, Ascending, Descending, Sistan, the Burnt City, Zaranj

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A Study and Analysis of Process of Development Levels Changing and Regional Inequalities in Yazd Province During 1976-1996

The aim of this paper is to study and analyze the development levels and regional inequalities in Yazd province during 1976, 1986, 1996. The method of study is descriptive-analytical in which quantitative method and computerized softwares are used to support the arguments. According to the researches, in 1976, from the cultural, sanitary- remedial, economical and integrative indexes in Yazd region, Ardakan region in population index and Bafgh in foundational means are considered to have maximum benefits and Taft region as minimum benefits. In 1986, Yazd region in economical and gender indexes had reduced due to the immigration of rural population to the cities. Thus, people got less job opportunities, but Bafgh made extensively high development due to the utilization of mines. While in the year 1996 from the total eight regions of Yazd in compositionary indexes, only four regions in a sense Meybod, Bafgh, Ardakan, and Taft were considered to have maximum benefits and Mehriz, Abarkooh and Tabas were considered to have less benefits. The study of the regional inequalities in Yazd during 1976-1996 shows that the rate of this coefficient in all argued indexes, except population index, in 1996 compared with 1976-1986 is decreased. The reduction of regional inequalities is due to decenteralization of industrial factories from Yazd province to the other cities and the establishment of different universities in almost all the cities of the province. Thus, with the offer of equal opportunities for all regions in the province and with the equal regional development with respect to abilities and population needs, the region can reach the regional equality and blossom in capacity and growth of natural potentials and human.

Keywords: Levels, Development, Inequality, Region, Yazd.

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The Effect of Water Extraction from Iranshahr Aquifer on Bampour River Base Flow

Iranshahr aquifer is one of balanced aquifer in Sistan and Balouchestan province. Discharging of Iranshahr aquifer by permanent Bampour river supported this point. Nevertheless, in the recent drought there is a sign of decreasing of base flow in this river. So it seems that the hydrogeological and managerial studies are needed for this aquifer.

In this research a ground water model was developed to study the effect of water level decline on the base flow of Bampour river. Firstly, hydrogeological evaluation of Iranshahr aquifer was studied using the result of the pumping test, geological logs and profile, geoelectrical studies and field observation. Data from November 1999 is selected for designing the model in the steady state condition. Then, conceptual model of the aquifer and provision any input files to the model, is constructed for stable conditions to optimization of k parameter and conductance factor of bottom sanitation and edges of flow by using available data for processing Modflow Windows (PM WIN) software.

In the next step, the model was calibrated and hydraulic conductivity and drain hydraulic conductance optimized. The model is then calibrated to a transient condition. A transient calibration or a transient verification test is necessary to calibrate values of the specific yields and recharge parameters. Calibration in the transient state for years 1999-2000 accomplished and model verification was performed for years 2000-2001. Verification results indicate that calibrated model is capable for managerial practices. Output results of the model, during this two years indicate that annual discharge is more than the annual recharge, which correspond with the decreasing unit hydrograph of the aquifer and any wells in the model environs.

Keywords : Aquifer, Model, Sanitation, River, Base flow, Bampour.

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Application of Weighted Linear Combination (WLC) Model in Zonation of Potential Occurrence of Landsliding
(The Case Study of Sarkhoun Area in Chahar- Mahal & Bakhtiyari)

One of the first steps in natural resource management & development planning is the recognition of susceptible area to mass movements and landslides events. These phenomena occur under influence of many natural and human factors. In this survey the occurred mass movements and landslides has been recognized in Sarkhoun area in Ardal division of Chahar-Mahal & Bakhtiyari Province by interpretation of arial photoes and field observations with using GIS- Based Weighted Linear Combination (WLC) method, potential occurrence of landsliding in the Sarkhoun area based on 10 criteria(including of slope,aspect of slope, landcover, distance to main faults,greenness index, NDVI index,annually rainfall, geology,distance to main roads and distance
to rivers) was evaluated and potential occurrence zonation map of mentioned area have been provided. For data standardizing, the fuzzy method and for weighting to criterions , AHP method have been used. The results of zonation shows that about 38% areas have high potential for landsliding. Zonation map shows susceptible and accident-prone zones for land sliding and can be used widely by natural resources managers and regional planers.The recognition of areas with high potential to landsliding, makes available necessary knowledge for avoiding from these areas and makes possible preponderant measures performance.

Keywords: Landslide, Zonation, Natural Hazards, Weighted Linear Combination (WLC) model, Geographic Information System (GIS), Chahar-Mahal & Bakhtiyari.

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Modelling of Housing Construction in Accordance with Climatic Factors of Chabahar

The goal of this research is to carry out proper building methods to local climate. Building designers with the help of climatologists use facilities maximum of climatic potential for house designing in each region. Using natural energies in houses results in fuel consumption saving and what is more important, increasing of comfort guality, environment health of living and environment sanitary. House designing in accordance with climatic condition of the region is the first defensive line against external factors of the house. This research is an attempt for proposing some designs for houses that use maximum climatic conditions of region with respect to shining, temperature, raining and relative humidity. The site of the study which located in the southern seashores of the country, enjoys particular climatic conditions such as high sun-shining hours, breezy winds from sea toward land (Chabahar), and local winds. In the present study, it was recognized that regarding the imperishable (durable) forces such as sunshine, wind and using them in improving temperatural conditions and house comforting indicators which rise in this region can supply a good deal of energy for living comfortably in houses.

Keywords: House, Climate, Environment, Chabahar, Comfort.

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Using of Landsat 7 Satellite Images and G.I.S Technic in Study of Gavkhuni Playa Paleo Domains

Gavkhuni playa has illustrated on its bed the occurrence of climatic-environmental happenings as an evidence and record of the Quaternary in Iran and enjoys a special position in Iran`s geomorphological domains .In the other hands, the domain of the Quaternary, diversity and stability of the archeological morphic forms portray the predominance of climatic cold and warm different phases and the reserve variations of matter and energy at different geomorphic levels.
Study of Gavkhuni paleogeomorphology will help us identify and reconstruct the predominance of the past conditions and, at the same time gain a correct and true understanding of such domains and compare. Our behavior with the geomorphic nature of the region in the course of proper management and planning .In this paper, employing Landsat satellite images and performing pre-processing operations, mosaic and analysis of the images of the region of under - study, we reconstructed the domain of Gavkhuni in different phases of progression and regression. Then we proceeded to identify separative and compare the domains with the paleogeomorphic forms .In another word, employing processing various methods and the region altitude digital model to combine with the paleo domains and levels of the great Gavkhuni,we would be able to identify and separate the playa consecutive levels in different phases and compare paleo forms including mega deltas and terraces of lakes remained from the previous levels with the reconstructed domains.
At the end ,we both prepared paleo thematic maps, identified and reconstructed the great Gavkhuni domain upto four various phases. This method has been used for the first time in the domain of Gavkhuni playa and is recommended as a reliable method for studying other playa of Iran.

Kaywords: Gavkhuni playa, Landsat Images 7, Image Prossesing, Digital Elevation Models Mega Delta, Paleo Domains Morphic Index, Thematic Maps.

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A Survey of "Pir-Gel" Mud – Volcano Located in the East of Bazman Volcano and its Characteristics

The Pir-Gel mud-volcano, hitherto considered to be an unusual geomorphological phenomena of Sistan & Balouchestan province, lies in the Siyah Bandan mountain range, stretching to the east of Bazman and the south - west of Khash. The mud-volcano is a 127 meters above the surrounding countryside and a maximum height is 1667 meters above the sea level. There are seven active craters and three or four latent cones at present. It is located in a marl sequence of rocks extending over an area of nearly fifty hectares. Water erupting from the mud-volcano is saline, the mud being almost thin, with a dark gray color, and the exudation of carbon dioxide (co_2) gas, is relatively nominal.
No body has previously investigated the Pir-Gel mud -volcano and it is not marked on the geological map of Iran. By the absence of published data, the author has used his13-year-accrued practical knowledge of field work carried out on mud-volcanoes elsewhere in the province to study the Pir-Gel mud-volcano.

Keywords: Mud-Volcano, Pir-Gel, Marl, Bubble, Exudation of Mud and Gas, Active and Inactive Crater.