An Analysis of Physical Earthquake Susceptibility of Kerman Population Using GIS

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Abstract

Earth surface temperature has been used in a wide variety of scientific studies including climatology, astronomy, meteorology, hydrology, ecology, geology, and medical sciences. The design and optimization of transportation network and site selection of conflagration and particularly in the calculation of the actual evapo-transpiration we require such data. Considering the earth's surface temperature monitoring in a limited number of meteorological stations to the distribution point we need to place and estimate the surface temperature in a wide area, and at the same time the surface temperature. To access the earth's surface temperature and classification the SEBAL and decision tree algorithm was used. Using ETM+ images dated 31 August 2000 and pre-process, files were ready for implementation of SEBAL method. Processing of the above mentioned software was through Envi4.5 and ArcGIS 9.3. This paper estimates the temperature differences if less than 5.57°C between a satisfactory level through remote sensing and statistics, while we estimated temperature measured from ground level for a period of 12 years (1993-2005) at Maragheh meteorological station. Results indicate that temperature estimates through remote sensing and such studies are applicable for earth science research and the environment.

Keywords: Earth Surface Temperature, SEBAL, Decision Tree, ETM +, Remote Sensing, Geographic Information System, The Central Section of Maragheh City.

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The Application of Geostatistics Methods in Temporal Precipitation Distribution (Case Study: Kerman Province)

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Abstract

Ggiven that assessment data often point to be made, are necessary to generalize to the entire region, Interpolation operation have been done on areas of precipitation. In this study using Kriging and inverse weight method, interpolation of rainfall in Kerman Province has been attempted. For this purpose, the monthly rainfall statistics for 9 synoptic stations in Kerman province and 11 synoptic stations neighboring provinces have been used.

The results of this study indicate that Kriging method with lower error levels is more appropriate for the interpolation of rainfall in this region. Models based on fitted Semivariogram models, Spherical, linear and exponential models provide better facilities for the preparation of a precipitation isomap. Between models in the spherical model for the months January to June and also in December, the exponential model for the month of July and the exponential model for the months August to November show the most appropriate change model views that are detected. Based on maps prepared for different months, while the highest rainfall occurred in winter time change the amount of the highest range 42-13 mm in the season. Spatial gradients of changes in precipitation decrease trend are from south to north. Other seasons in the low average range of precipitation changes also showed no significant fluctuations.

Keywords: Geostatistics, Kriging, precipitation, Kerman province.

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The Spatial Analysis and Site Selection of Inner City Parks: The Case Study of Kazeroon City

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Abstract

Nowadays the industrial pollutions have destructive influences on biology environment and the life of their inhibitors. For reducing the destructive effects of these biological hits, the most effective and at the same time the simplest way is to improve the Green space and biology. The geographic information software by utilizing different analysis functions, allows the incorporation of spatial and non-spatial data and also the management and simultaneous analysis of them, thus it can be used as an instrument for city planners. In the Kazerun city that was studied in this article, the excessive lack of green space and un just distribution of that is highly sensed. This study searches for efficient distribution of Green space by using hierarchy analysis (AHP) and index overlap model (IO). To obtain this aim, by using the GIS software and after going through data collection stage, providing new data layers, sorting and valuating the layers and at last, weighing and data layers overlapping, we prioritize the Kazrun city lands for new Green space development. At last, we divided these lands to very good, good, medial, weak and very weak that after adapting this map to land facts, the very good and good land classes were chosen for Green space development (local or City Park). The current research method is descriptive-analytic. The required information of this research were collected from field observation, comprehensive design study and descriptive of Kazerun city, 1/2000 maps of current situation.

Keywords: City Green space, Geographical Information System (GIS), Kazerun city, Location, Spatial Distribution, firehouse.

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The Study of Salinity Changes of Groundwater Sources in Sarab Plain

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Abstract

Sarab Plain is located between Sabalan Mountain and Bozgoosh chain. This plain has rich groundwater resources, but waters asre saline due to movement toward the center of plain. This study assesses chemical quality of Sarab groundwater, and studies salinity changes of groundwater sources, in a duration of a decade (1999-2008). It uses the result of chemical analysis 45 deep and semideep wells in plain including EC, SAR and Cl indexes. It shows the distribution of quality indexes with mapping quality maps. The results of this study show that piedmonts of around plain have low and very low saline groundwaters, and the rate of salinity increases toward center and west of plain. Also, variation of EC index show that the rate of fresh groundwater has declined from June 1999 until June 2008. In this period low salinity of groundwater has inceased to 14.5%

Keywords: Salinity changes, Groundwater resources, GIS, Sarab Plain.

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Analysis of Preventing Factors of Peoples' Participation in Rural Development with an Emphasis on Rational Thinking Method
(Case study: District of Sonbol Abad)

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Abstract
Participation, one of the strategies sustainable developments, has faced to challenges in process of operation. These challenges have cultural - intellectual roots or have linked to the strategies attraction of participation. This article searches weak roots of informal and formal participation of villagers within the intellectual method-cultural. The research methodology is based on descriptive and analytical and the tool of data collection is questionnaires and documents methods. Research findings indicate that about 80 percent of community participation does not participate or is less in formal institutions. But about 60 percent of people have non-formal public participation that the major reason relates it to traditions and social customs and is not related to personal motivation and intellectual. According to The statistical analysis, factors of none participation in the official activities has significant relationship with the rate of individualism, none responsible, poor trust people on each other and the lack of futurism. As regards civil institutions can create culture of participation in community so strength and structure of civil institutions and NGOs can overcome barriers of participation.
Keywords: Method of thinking, Participation, Rural development, Inherently insecure Sonbol Abad.

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The Study of Daily Extreme Temperature and Precipitation in Urmia Lake Basin

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Abstract

For investigation of variability of climatic elements of Urmia Lake basin, maximum and minimum daily temperature and daily precipitation data over period of 1984-2006 were analyzed. In this paper, 6 indices for analysis of temperature variability and 8 indices for analysis of precipitation variability were used. The trends of these indices were specified using least square approach and for identifying their significance nonparametric, Man-Kendal test was used. Results indicate that over the study period climatic conditions have changed. The number of summer days and warm nights significantly increased with the number of cold days and cold nights reduction. Also total annual precipitation, number of precipitation days (above 2 mm) and number of heavy precipitation days (equal or above 10 mm) have significant reduction. Moreover, in the study period the number of consecutive wet days has significant reduction, but increasing of consecutive dry days is not significant.

Keywords: Extreme precipitation indices, Extreme temperature indices, trend, Man-Kendal, Urmia Lake basin.

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Land Surface Temperature Calculation Using SEBAL and Decision Tree Methods Based on ETM + Image in RS, GIS Environment in the Maragheh Central Region

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Abstract

In a wide variety of scientific climatology studies earth surface temperature, is important, Astronomy, meteorology hydrology, ecology, geology, medical science, design and optimization of transportation network and site selection of fire extinction and particularly cases required. In the calculation of the actual evapotranspiration also we consider these.. Considering the earth's surface temperature monitoring in a limited number of meteorological stations to the distribution point and the need to place the surface temperature in a wide area and at the same time the surface temperature were estimated. To access the earth's surface temperature and classification SEBAL algorithm and decision tree were used. Using ETM + image dated 31 August 2000 and pre- process, files became ready for implementation. For processing of SEBAL method. the above mentioned software Envi4.5 and ArcGIS9.3 were used. This paper estimates the difference less than 5.57° C, temperature difference between a satisfactory level was estimated through remote sensing and statistics. Temperature measured from ground level 12 years (1993 - 2005) in Maragheh meteorological station was achieved. Temperature was estimated through remote sensing and studies applicable in earth sciences research and the environment.

Keywords: Earth surface temperature, SEBAL, Decision tree, Giles, ETM+, Remote sensing, Geographic information system.

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The Study the Necessity of New Towns Creation in Iranian Urban System

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Abstract

In different countries, new towns are constructed based on necessity and their functions. Nowadays, making new towns is not of course performed with the aim of realizing the notion of ideal habitation or Utopia, rather decentralization of large cities is its purpose and main goal. Nonetheless, this topic is differently viewed in Iran in comparison with other countries, and its utility and function in Iran is not the same as the real purpose of making new towns in the world. This article studies the country's population variations in recent decades and considers urban system of the country. It also analyzes the activities of new towns in recent years and eventually argues the necessity to make new towns in Iran. The agreement of this strategy with alternative ones, especially with the strategy of middle cities reinforcement, is argued as well.

Keywords: New towns, Urban system, Iran, Population.

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