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Seismic Zonation of Yazd Province

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Abstract

(Paper pages 209-226)

Yazd Province and its surrounding area between central Iran Block and the edge of Central Kavir (desert) is the study area. Considering the Polarization of wave from earthquake and defining the Fault plaine solution , the significant effects of stress on the area are as:

1) Campressive with strike slip component (right lateral)
2) Strike Slip (right lateral) with Compressive Component)
3) Compressive
4) Strike Slip with extensive Component faults with activating potential in This region are Kuhbanan , Bahabad, Rafsanjan ,Anar, north of Yazd, and Dehshir- Baft faults.

Generally This region is calm seismically. Cocerning statistics srudies of occurred earthquakes and analytic studies based on concentration and activity of faults in This area, five separated Zones including very high risk, high risk, low risk, and very low risk Zones

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are identified. East and southern Part of the region have higher scismic potential .

The Charactristic Of Endokarst in The Bed Rock Of Hamedan' s Sinkholes Area

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Abstract

(paper pages 227-240)

The Famenin,Kaboudar-Ahang,Ghahavand plains are located in the north of Hamedan province.The sediment thickness of thier aquifers is about 70-100 meters .In recent years, some big and dangerous sinkholes have been developed in this area.By the result of excavations that done in these plains and investigation of the sourrounded outcropped area,it was found that the bed rock of this area has been made of Oligo-miocen limestones.

According to the field observation,the measuring of joints and fractures systems, stud of thin sections, characteristics of excavations,

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yield of wells, the results obtained by chemical experiments of water and the estimation of parameters such as saturation and stability indexes,the amount of free carbon dioxide and the primary pressure of carbon dioxide gas,it was concluded that the Karstification phenomenon was happened in the bed rock and the Endokarst structures exist in it. Thus,The exist of Endokarst in bed rock cased to wells have been had high yield and Sinkhole were made in these area.In order to avoid or reducing the occurrence rate of Sinkholes in this area, we should avoid digging new wells in the bed rock and should stop the pumping of wells which have been drilled in the bed rock and have high yield.

Keyword: Hamedan,Endokarst,Groundwater,Sinkhole,free carbon dioxide

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Designation of Computer Software For Assesment of Rock Mass Parameters

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Abstract:

(paper pages241-254)

For the analysis of the stability of underground opening or rock slopes, it is essential attent to rock mass parameters. To assesment of these parameters, Hock-Brown and or Mohr- Columb criteria has been used. In this paper, a software has been presented to calculate rock mass parameters on the base of abovementioned criteria. Input data of this softwear are underground opening deep or failur surface of slopes, unite weight of rock mass, *GSI*(Geological Strength Index), sigci (uniaxial compressive strength of intact rock) and mi (costant of Hoek-Brown for intact rock). The out put data are 12 cases, that use for the analysis of the stability of underground opening or slopes.

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Evaluating Groundwater vulnerability in Ghazvin Plain

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Abstract:

(Paper pages 255-270)

The groundwater protection is important in order to have a good management of water resources. The Ghazvin plain situated in west of Tehran, Iran has a critical situation in which the groundwater level declines and aquifer pollution has been observed in recent years. In this research, for evaluating the groundwater vulnerability, DRASTIC index has been used for this plain. Then, a Geographic Information System (GIS), ILWIS has been used to create a groundwater vulnerability map. The results of this study estimated DRASTIC value to be in the range of 35-108 using general DRASTIC value, almost 11% of the study area was recognized to have low feasibility, 43% moderate and 37% high and 10% very high feasibility for pollution. The DRASTIC results show a good adaptation between increasing the nitrate rate and the DRASTIC index.

Keyword: Evaluation, Vulnerability, Index, DRASTIC, Groundwater, Ghazvin plain

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