World Academy of Science, Engineering and Technology
International Journal of Geological and Environmental Engineering
Vol:9, No:01, 2015

Stability Assessment of Chamshir Dam Based on DEM, South West Zagros

Authors : Rezvan Khavari

Abstract : The Zagros fold-thrust belt in SW Iran is a part of the Alpine-Himalayan system which consists of a variety of structures with different sizes or geometries. The study area is Chamshir Dam, which is located on the Zohreh River, 20 km southeast of Gachsaran City (southwest Iran). The satellite images are valuable means available to geologists for locating geological or geomorphological features expressing regional fault or fracture systems, therefore, the satellite images were used for structural analysis of the Chamshir dam area. As well, using the DEM and geological maps, 3D Models of the area have been constructed. Then, based on these models, all the acquired fracture traces data were integrated in Geographic Information System (GIS) environment by using Arc GIS software. Based on field investigation and DEM model, main structures in the area consist of Cham Shir syncline and two fault sets, the main thrust faults with NW-SE direction and small normal faults in NE-SW direction. There are three joint sets in the study area, both of them (J1 and J3) are the main large fractures around the Chamshir dam. These fractures indeed consist with the normal faults in NE-SW direction. The third joint set in NW-SE is normal to the others. In general, according to topography, geomorphology and structural geology evidences, Chamshir dam has a potential for sliding in some parts of Gachsaran formation.

Keywords : DEM, chamshir dam, zohreh river, satellite images
Conference Title : ICGG 2015 : International Conference on Geography and Geosciences
Conference Location : Istanbul, Türkiye
Conference Dates : January 26-27, 2015