

Geology, Geomorphology and Genesis of Andarokh Karstic Cave, North-East Iran

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Abstract : Andarokh basin is one of the main karstic regions in Khorasan Razavi province NE Iran. This basin is part of Kopeh-Dagh mega zone extending from Caspian Sea in the east to northern Afghanistan in the west. This basin is covered by Mozdooran Formation, Ngr evaporative formation and quaternary alluvium deposits in descending order of age. Mozdooran carbonate formation is notably karstified. The main surface karstic features in Mozdooran formation are Groove karren, Cleft karren, Rain pit, Rill karren, Tritt karren, Kamintza, Domes, and Table karren. In addition to surface features, deep karstic feature Andarokh Cave also exists in the region. Studying Ca, Mg, Mn, Sr, Fe concentration and Sr/Mn ratio in Mozdooran formation samples with distance to main faults and joints system using PCA analyses demonstrates intense meteoric diagenesis role in controlling carbonate rock geochemistry. The karst evaluation in Andarokh basin varies from early stages 'deep seated karst' in Mesozoic to mature karstic system 'Exhumed karst' in quaternary period. Andarokh cave (the main cave in Andarokh basin) is rudimentary branch work consists of three passages of A, B and C and two entrances Andarokh and Sky.

Keywords : Andarokh basin, Andarokh cave, geochemical analyses, karst evaluation

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