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Revealing epithermal mineralization in Eastern Iran, based on remote sensing along comparing geological evidences with agreed tectono-magmatic models

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By considering clay minerals genesis, advanced argillic alteration zones with over several decade mining for Kaolin occuring in Northwest of Gonabad (Southern Khorasan Razavi Province, Eastern Iran) could indicate active geo-epithermal system in history of volcanism events through the region. Co-occurence of propylitic and silisified alterations and also high Fe oxide bearing areas with clays, illustrate the expectancy of epithermal sulfide mineraization. By using remote sensing techniques and separating the lithology and alterations, as well as structural analyzing on the lansat ETM, and aster satellite images of the area, during objective adventures on the intense silisified alteration and Fe Oxide zones, several outcrops of vein style quartz mineralized system (pyrite,galena,chalcopyrite) have been discovered. By looking to the agreed classifications which offered for diverse epithermal systems in stratovolcanic environments, alterations and related mineralizations could be well identified. Also comparing the petrology, tectonic seting and types of alterations and related mineralization with known global geological models, revealed several rational evidences for the epithermal gold prospecting potential in the region.