

## NEOGENE - QUATERNARY MAGMATISM AND METALLOGENY IN IRAN

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The motor of Iran magmatism is northwestward migration of Arabian microplate. The migration commences in Early Eocene and is still going on. Magmatism and tectonic are two main effects of migration, which occur in the collisional zone, northeast of the microplate. The collision area is a NW-SE zone from southeast of Black Sea to Iran-Pakistan border (40°-61° east) between Zagros and Caucasus-Coppehdagh axis. Magmatism is manifested by submarine volcanism in Eocene, subvolcanic in Mio-Pliocene to present. All magmatic events superimpose one another. Tectonic is compressional, with general NW-SE trend, intersected by NE-SW to N-S lineaments. Magmatism in Early Miocene appears as acid, calc-alkaline to alkaline, subaqueous to subaerial volcanoes. In Late Miocene-Pliocene it is manifested by acid, alkaline and calc-alkaline, subaerial stratovolcanoes. Both Early Miocene and epithermal circulating systems. They generate Cu-Mo-Au porphyry systems wherever the volcanic centers intersect the Eocene volcanics and Au, As, Sb, Hg epithermal systems wherever intersect ultrabasic basement. The examples by Sungun and Sarcheshmeh. The epithermal systems are scattered in northwest (Zarshuran-Dashkasan axis) and east Iran (Neishabur-Ferdows axis). Calc-alkaline and high K-alkaline basalt volcanoes, travertine and mineral water springs represent Late Quaternary activities. Saline deposits of K, B and Na (Cl<sup>-</sup> and SO<sub>4</sub><sup>-</sup>), Ca, Ba, Sr (SO<sub>4</sub><sup>-</sup>), Zn-Pb-Cu-Ag-Au, U as well as perlite, diatomite, kaolinite, alunite, bentonite, zeolite, travertine are resources linked with Neogene-Quaternary magmatism. The temporal-spatial distribution of Neogene-Quaternary igneous rocks, their petrochemistry and environment (submarine/subaerial) and the distribution of different metallic and non-metallic minerals in the same time-space envelope are studied. The genetic relation of magmatism and mineralization is discussed.