



Fuzzy Logic Modelling and Hidden Geodynamic Parameters of Earth: What is the role of Fluid Pathways and Hydrothermal Stages on the Mineralization Variations of Kozbudaklar Pluton over Southern Uludag

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Plate tectonics is one of the most illustrated theory and biggest geo-dynamic incident on earth surface and sub-surface for the earth science. Tectonic settlement, rock forming minerals, form of stratigraphy, ore genesis processes, crystal structures and even rock textures are all related with plate tectonic.

One of the most known region of Turkey is Southern part of Uludağ and has been defined with three main lithological union. Region is formed with metamorphics, ophiolites and magmatic intrusions which are generally I-type granodiorites. Also these intrusion related rocks has formed and altered by high grade hydrothermal activity. This study approaches to understand bigger to smaller frameworks of these processes which between plate tectonics and fluid pathways. Geodynamic related fuzzy logic modelling is present us compact conclusion report about structural associations for the economic generations.

Deformation structures and fluid pathways which related with plate tectonics progressed on our forearc system and each steps of dynamic movements of subducting mechanism has been seemed affect both hydrothermal stages and mineral variations together. Types of each deformation structure and mineral assemblages has characterized for flux estimations which can be useful for subsurface mapping. Geoanalytical results showed us clear characteristic stories for mutual processes. Determined compression and release directions on our map explains not only hydrothermal stages but also how succesion of intrusions changes. Our fuzzy logic models intersect sections of physical and chemical interactions of study field. Researched parameters like mafic minerals and enclave ratios on different deformation structures, cross sections of structures and relative existing sequence are all changes with different time periods like geochemical environment and each vein.

With the combined informations in one scene we can transact mineralization processes about region which occurs in different stages such as subducting slabs, arc volcanism, subsurface flux estimates related orogenic processes, and other geochemical effects of plate movements.

Keywords: Hydrothermal Stages, Flux Estimate, Southern Region of Uludağ, Subsurface Mapping