

## **MAGMA-ENCLAVES INTERACTION IN THE SUBVOLCANIC ZONE OF THE EAST CARPATHIANS, ROMANIA**

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In the East Carpathians, calc-alkaline intrusive magmatism took place in Pannonian - Pontian time span (8.5 Ma-11.7 Ma). In this area, shallow intrusions penetrated either a Precambrian metamorphic basement or a Paleogene sedimentary one.

Three distinct igneous petrological groups are present. Group I occurs only as cognate enclaves (tholeiitic basalts and basaltic andesites) and represent the less differentiate magmas, having normative diopside. Group II includes andesites, microdiorites, dacites, the most widespread, occurring both as enclaves and as host rocks and having normative corundum. Group III comprises enclaves-free rhyolites.

On the basis of petrological, mineralogical, chemical and rheological features of enclaves and host rocks and their evolution, we can conclude: 1) The cognate enclaves and host rocks trend from diopside to corundum normative with increasing  $\text{SiO}_2$ , the evolutive tendency of the major components and constant  $\text{Mg}/(\text{Fe} + \text{Mg})$  ratios for enclave-host pairs, may indicate the fractionate crystallisation of hornblende from initial calc-alkaline basalt- andesitic magma. 2) Thermal, mechanical and chemical interactions between enclaves and magma led, finally, to the occurrence of the partial and selective assimilation processes accompanied by the formation of new minerals, structures and textures in reaction coronas around the enclaves. 3) The parent magma is hydrated with tholeiitic tendencies, formed in intermediary crustal magma chambers at depths of about 15-20 km, where the estimated temperature has been 700-800 °C and the pressure 6.43- 6.83 kbar