

GEODYNAMIC SIGNIFICANCE OF GREENSCHIST TO ECLOGITE FACIES MYLONITES IN THE PRE-ALPINE BASEMENT OF THE SOUTH CARPATHIANS (ROMANIA)

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The main Variscan simple shear zones preserved in the basement of the South Carpathians are structural markers separating Paleozoic litho-tectonic units and reactivated Proterozoic units. These shear zones are: thrust or overthrust faults related to large-scale Variscan nappe piling processes; post-nappe, regional strike-slip faults, connected to orogen-parallel movements; normal faults, related to late metamorphic extensional events. A wide range of physical conditions of the dynamic metamorphism (syn-tectonic blastesis) can be observed: greenschist to epidote-amphibolite, amphibolite and eclogite facies. The progressive character of the deformation and blastesis in mylonites allow us to distinguish them and to trace important tectono-metamorphic discontinuities in older terranes. Geodynamic significance of Variscan mylonites can be deduced from:- The existence of medium grade mylonites (kyanite; kyanite-silimanite; garnet-biotite bearing mylonites) in between the gneiss units, whose metamorphic histories suggest internal parts of the Variscan belt and deep seated environments; - The connection of low-grade mylonites with preserved low-grade Paleozoic rock-assemblages related to external parts of the belt (some for-arc or oceanic type remnants are significant) or to back-arc mobile zones;- Contrasting baric regime (and geothermal gradients) of the mylonites related to subduction-underplating processes (exhumed eclogite-facies mylonites) or to syn-tectonic granite emplacement in magmatic arc environment (LP-HT mylonites).