

POST EMPLACEMENT TECTONICS AND KINEMATIC ANALYSIS OF THE ALBANIAN OPHIOLITES

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The Albanian ophiolites, representing fragments of the destroyed Neo-Tethyan lithosphere, occupy Mirdita zone and its boundary with Krasta-Cucali zone which are the northern extension of Subpelagonian and Pindos zones of Greece respectively. New field data, concerning structural features of the ophiolites and based on the shear criteria and kinematic indicators, have been used in the kinematic analysis in order to discriminate different tectonic events particularly in the post-emplacment tectonic history of the Albanian ophiolites. Numerical methodologies have also been used in the palaeo-stress analysis in order to define the position of the main axes of stress ellipsoid during these tectonic events.

Although structures of the initial emplacement are poorly preserved in the ophiolites, a well defined sketching lineation trending NW-SE observed in the metamorphic sole. It represents an early tectonic event (D_0), which possibly related to the emplacement mechanism but without a clear connection with kinematic indicators for the sense of emplacement movement. An important compressional event with horizontal σ_1 axes in the ENE-WSW direction caused an intensive imbrication of the Krasta-Cucali zone in Late Eocene times, before the tectonic emplacement of the ophiolites over Krasta flysch. The first tectonic event (D_1) which affected the ophiolites in Tertiary times was an extensional one with tensional axis σ_3 trending E-W to ENE-WSW. It caused extensive shear structures in semi-ductile to brittle conditions in the ophiolites and the tectonic emplacement of the later over Krasta flysch with sense of movement towards WSW, in Early Oligocene times after flysch imbrication. The second D_2 -tectonic event of the ophiolites was a compressional one with maximum s_1 -axes horizontal trending E-W to NE-SW. It took place in the Middle-Late Miocene and produced mainly sinistral strike-slip faults (NW-SE). The orientation of main axes of strain ellipsoid changed later in Late Miocene during an evolutionary compressional D_3 -tectonic event involved σ_1 -axis almost horizontal in the N-S direction and caused further imbrication in both ophiolites and Krasta-Cucali sediments.