

Paleoenvironmental comparison between the Brezoi-Titesti basin and the Southern Carpathians foreland, Romania

Tudor, E.¹, Roban, R.²

eugen.tudor@utexas.edu

1. Jackson School of Geosciences, The University of Texas at Austin, Austin, TX

2. Faculty of Geology and Geophysics, University of Bucharest, Bucharest, Romania

Understanding the connection between the Brezoi-Titesti (BT) basin and the Getic basin (GD) will lead to answers about the sedimentary environments evolution of the Southern Carpathians foreland. The Brezoi-Titesti basin is considered an Upper Cretaceous extensional basin formed during the exhumation of the Southern Carpathians isolated from the foreland by the Cozia Massif, uplifted due to the dextral movement towards the East as they collided with the East European Platform and forming the Eastern Carpathian foldbelt. The importance of this analysis is related with the overall complex evolution of the Southern Carpathians, with the Paleogene sediments preserving evidence of the Carpathians translation, in deep-water deposits such as the Olanesti Formation (sheet-like deposits), Eocene in age, the Corbi Formation (debris fall deposits) and the younger, Bradulet Formation (sheet-like deposits), Early Oligocene. The connection between the BT basin and the Carpathian foredeep (GD) can be seen within the Paleogene depositional environments, same features can be observed on both sides of the Cozia Massif. The main objective was to analyze the similarities and differences between the two basins using facies associations, paleocurrents, nanoplankton analysis, structural bed dip together with fission track analysis, from literature, in order to reconstruct the paleoenvironments of the two basins. The data shows a preexisting connection between the two basins, with the same depositional processes dominating in both studied areas, the Paleogene formations, although named differently are synchronous and have the same sediment source area. They were divided during Late Oligocene-Early Miocene times, when the Southern Carpathians, the Cozia Massif, was exhumed along the Lotru-Cozia Fault zone. The measured paleocurrents show N-NW to S-SE direction for the sediment flow, using ripples and flute casts found in the Oligocene deposits, showing the Getic Nappe and the Fagaras Mts as possible sediment source areas in the W and N.

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