



## **Tectonics in the Greater Caucasus (Georgia – Russia): From an intracontinental rifted basin to a doubly verging fold-and-thrust belt**

Jérémy Mauvilly (1), Jon Mosar (1), Kakhaber Koiava (2), Irakli Gamkrelidze (2), Nikolay Enna (3), Vladimir Lavrishev (3), and Vera Kalberguenova (1)

(1) University of Fribourg, Earth Sciences, Department of Geosciences, Fribourg, Switzerland (jon.mosar@unifr.ch), (2) A. Janelidze Institute of Geology of Tbilisi State University, 31 Politkovskaia str., 0186 Tbilisi, Georgia, (3) Kavkazgeolsyemka, Fed. state Unitary geological enterprise; 4A Sadoviy alley, 357600 Yessentuki, Russia;

The Greater Caucasus doubly vergent orogenic system has its origin in a Mesozoic-Early Cenozoic back-arc-type basin floored by extensively stretched and heavily intruded continental crust that has subsequently been inverted. Our field investigations along the Georgian Military Road in the eastern Central Greater Caucasus provide insights in its tectonic structure and reveal a bivergent orogenic wedge geometry. The southward propagating pro-wedge comprises the Southern Slope tectonic imbricate system developed in the Mesozoic-Early Cenozoic basin infill and the Transcaucasian Kartli foreland fold-and-thrust belt and is actively underthrust by the Transcaucasian Dzirula-Shatsky Block. The retro-wedge, on the other hand, incorporates the Northern Slope tectonic zones (including the Homocline Range) and the North Caucasian Terek-Sunzha foreland fold-and-thrust belt that developed in the Mesozoic-Cenozoic cover of the Scythian Platform. The Main Range zone forms the axial range of the mountain belt where crystalline basement is locally brought to the surface at almost 3000 m altitude along the Main Caucasus Thrust.

The study of the regional geology and paleotectonic reconstruction shows that the present-day tectonic units of the Caucasus correspond to distinct pre-collisional paleotectonic domains that existed in the Mesozoic-Early Cenozoic Neotethys-Eurasia ocean-continent convergence zone. The focus lies on the Greater Caucasus fold-and-thrust belt where the major thrusts of the orogen are interpreted as normal listric detachments of the former Greater Caucasus Basin that were reactivated as reverse faults during the collisional events of the Arabia-Eurasia convergence since the Late Eocene-Oligocene (Alpine inversion stage).