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Paleocurrent analyses of Akchagyl-Apsheronian sediments of Gombori Range (Western segment of Kura-fold thrust belt, Georgia)

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Gombori Range (GR) is a part of Kura Thrust Fault Belt Structure (KFTB). The range is separated from the Greater Caucasus to the north by the 10- to 25-km-wide Alazani Basin. Regional geologic, stratigraphic data and balanced cross sections suggest that the Kura fold-thrust belt has accommodated the majority of Arabia-Eurasia convergence since the early Pliocene. KFTB is characterized by seismic activity, several moderate earthquakes M - 4.5-5.3 occurred here during instrumental period, but there are evidences of strong historical events. In Pliocene, prior to GR formation, the area was covered by Paratethys Ocean. Initiation of deformation of KFTB was simultaneous to Akhchagyl-Apsheron (Ak-Ap) sedimentation caused by transgression-regression phases (3.4 – 0.7_Ma).

As a result of our research we have derived tectonic and paleogeographic information from paleocurrent analyses of Ak-Ap layers along the range. Field observations, lithostratigraphic cross sections and existing Geological maps were used to correlate paleocurrent layers of the Northern slopes to the supposedly corresponding ones in the south. We have used photogrammetric modelling and measurements in virtual reality for the areas hard to access in the field.

The final result of the research was analyzed in the frames of existing studies about structural and tectonic settings of the KFTB.