

Structural model of the western Kura foreland basin

(Ksani-Aragvi rivers section)

Tamar Shikhashvili

e-mail: tamar.shikhashvili112@ens.tsu.edu.ge

Ivane Javakhishvili Tbilisi State University

Faculty of Exact and Natural Science

Department of Geology

13 University Street, Tbilisi, Georgia, 0186

Annotation

To determine the geometry of the triangle zone within the western Kura foreland basin (study area), seismic interpretation utilizing progressive kinematic modeling was performed. The kinematic modeling is based on an analogous experiment. The study was conducted by integrating field observations, well data, and seismic data. On seismic profiles across the frontal thrust system of the east Achara-Trialeti fold-and-thrust belt and the western Kura foreland, we observed structural variability that influences fold geometry.

The Bitsmendi fault-propagation fold strikes east-west, transitioning into a wedge structure that forms a triangle zone.

The interpretation results of the seismic profiles are fully consistent with models of analogous triangle zones. Analysis of experimental data facilitates a better understanding of the kinematic evolution of structures and enhances seismic interpretation.

The triangle zone, developed in the western part of the Bitsmendi fault-propagation fold is associated with structural double wedges of fault-bend folding and is characterized by the presence of passive and active wedges, as well as passive-backthrust and passive-forethrust.