

Neotectonic dynamics and fluid re-migration in Azerbaijan: insights from GPS and seismic profiles

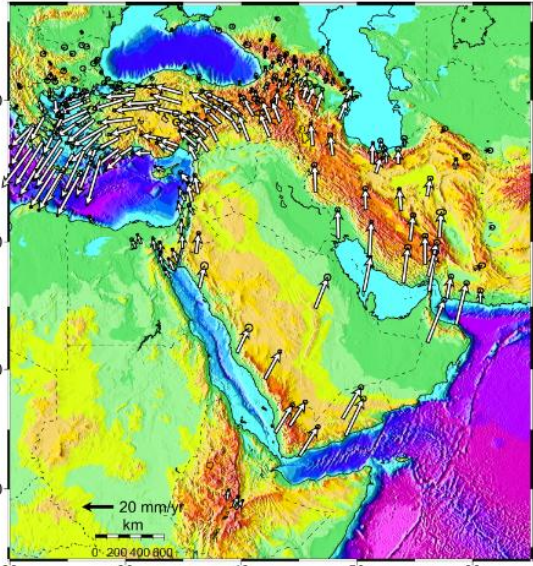
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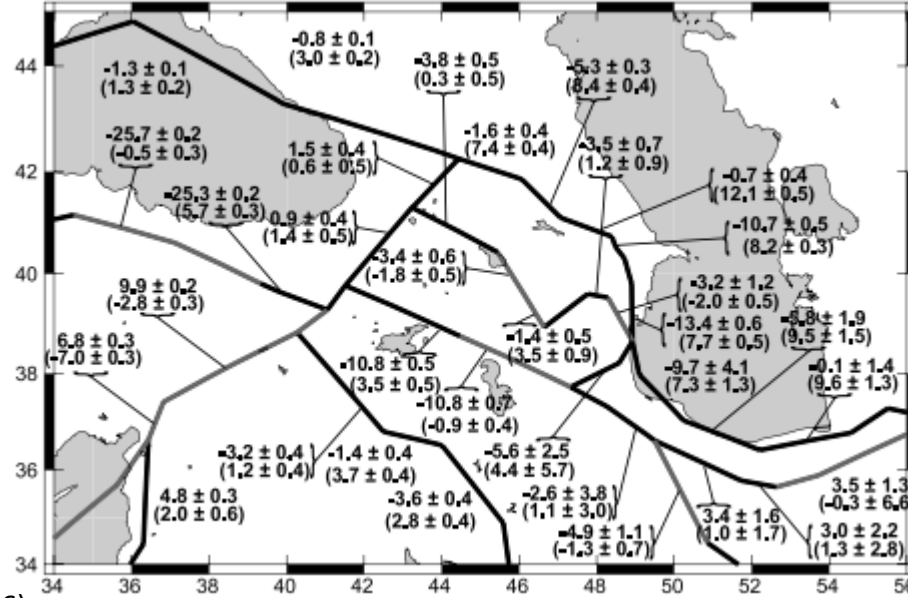
1. To identify the block structures in Azerbaijan that have been most significantly affected by neo-geodynamics (23 Ma to the present);
2. To identify the difference between the tectonic structure of the offshore and onshore sections of the belt;
3. Reconstructing the evolutionary history of reservoir structures in relation to neotectonic movements and their orientations;
4. We reviewed the hydrocarbon potential of Miocene



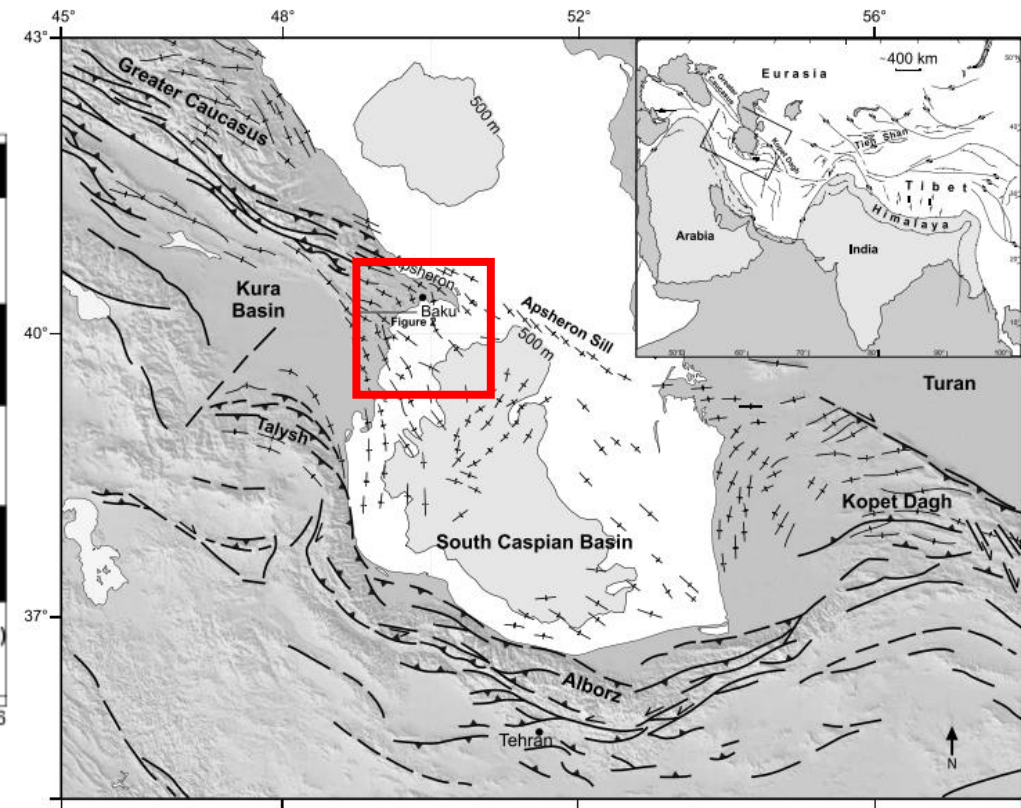
Known-knowns



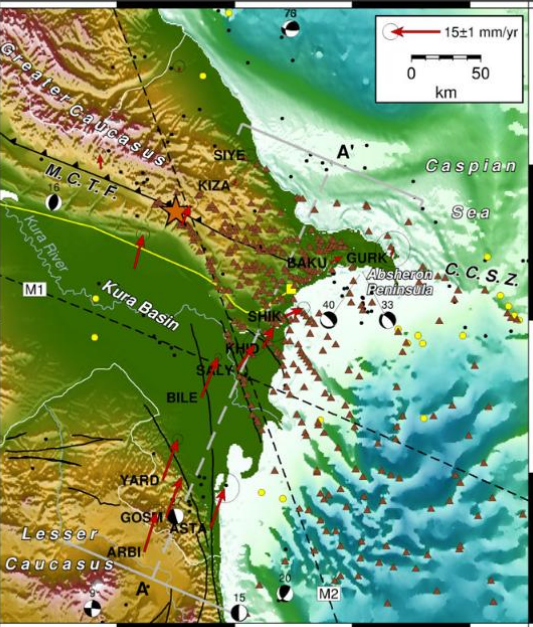
Map showing decimated GPS velocities relative to Eurasia, Reilinger (2006)



Map showing fault slip rates (mm/yr) deduced from the block model, Reilinger (2006)



Hinds et al., 2004. The red square represents the study area

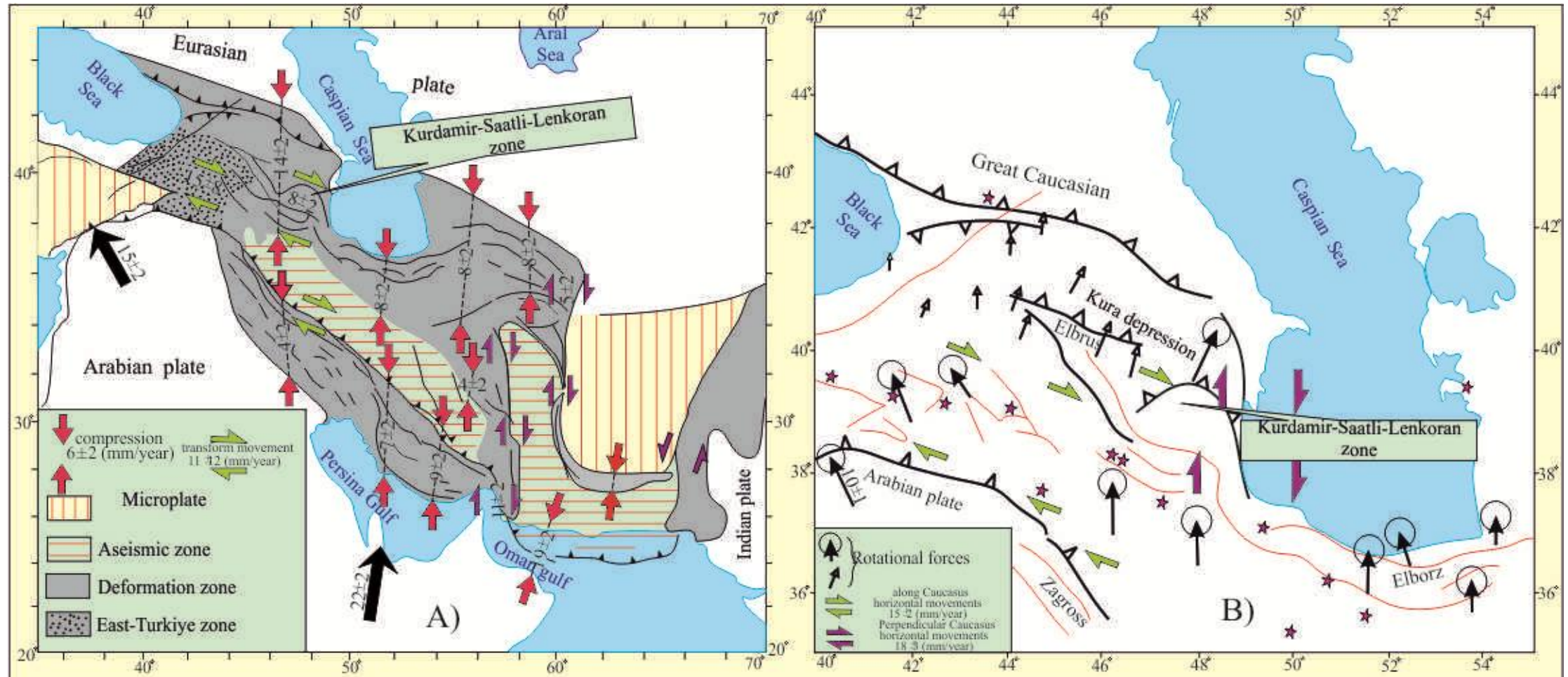


Kadirov et al., 2012

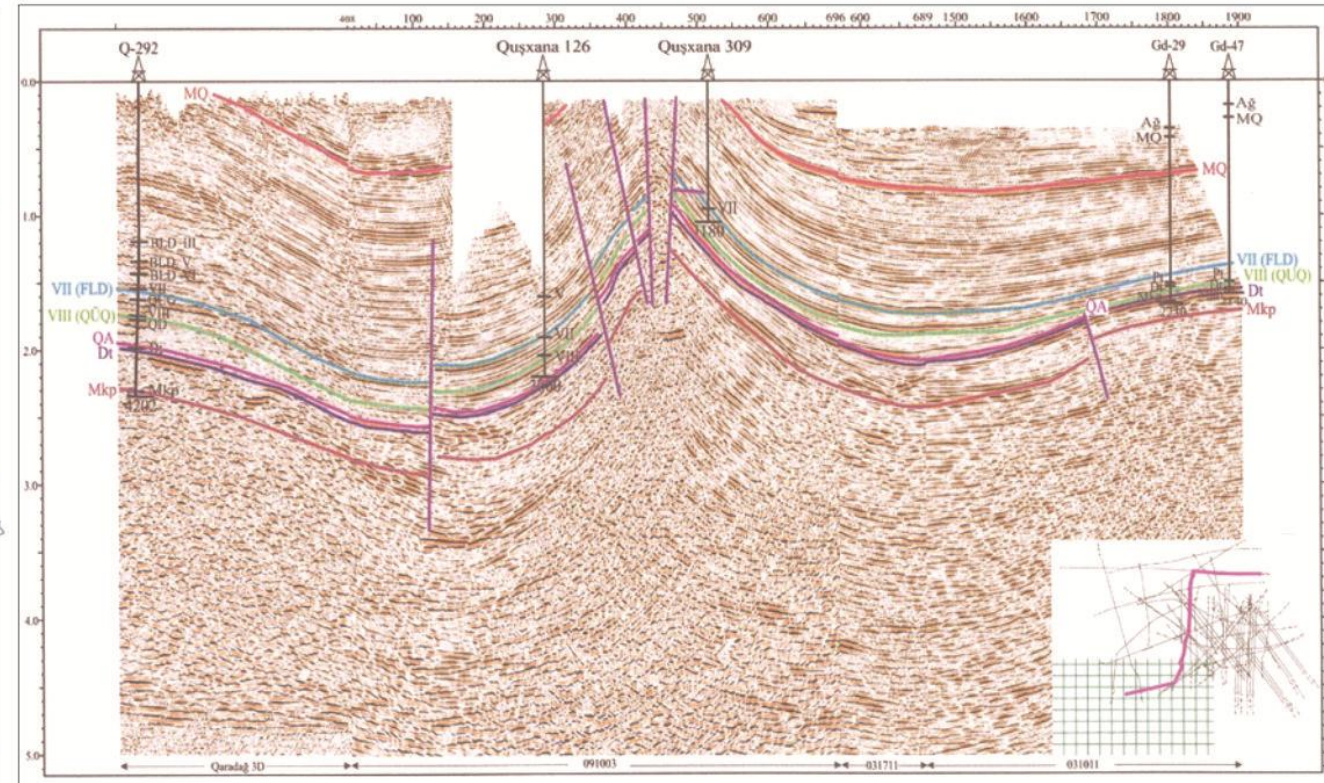
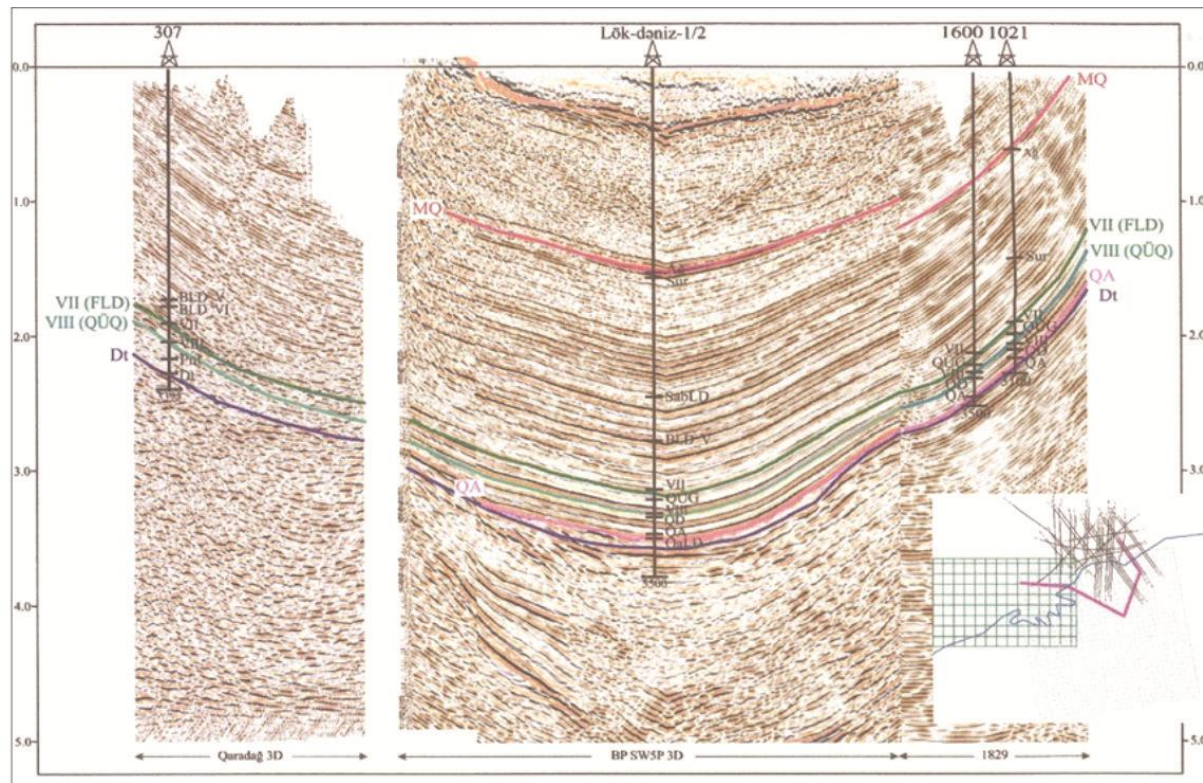
- Identify rotational tectonic processes specific to the Caucasus region.
- Highlight three principal geodynamic movement directions: north-south, anti-Caucasian, and general Caucasian.
- Compare GPS-based displacement rates across regions, noting the highest in eastern Iran and northern Oman, and moderate rates in the Caucasus.



GPS navigation system (Veriant et al., 2004)
detected the blocks rotation velocity

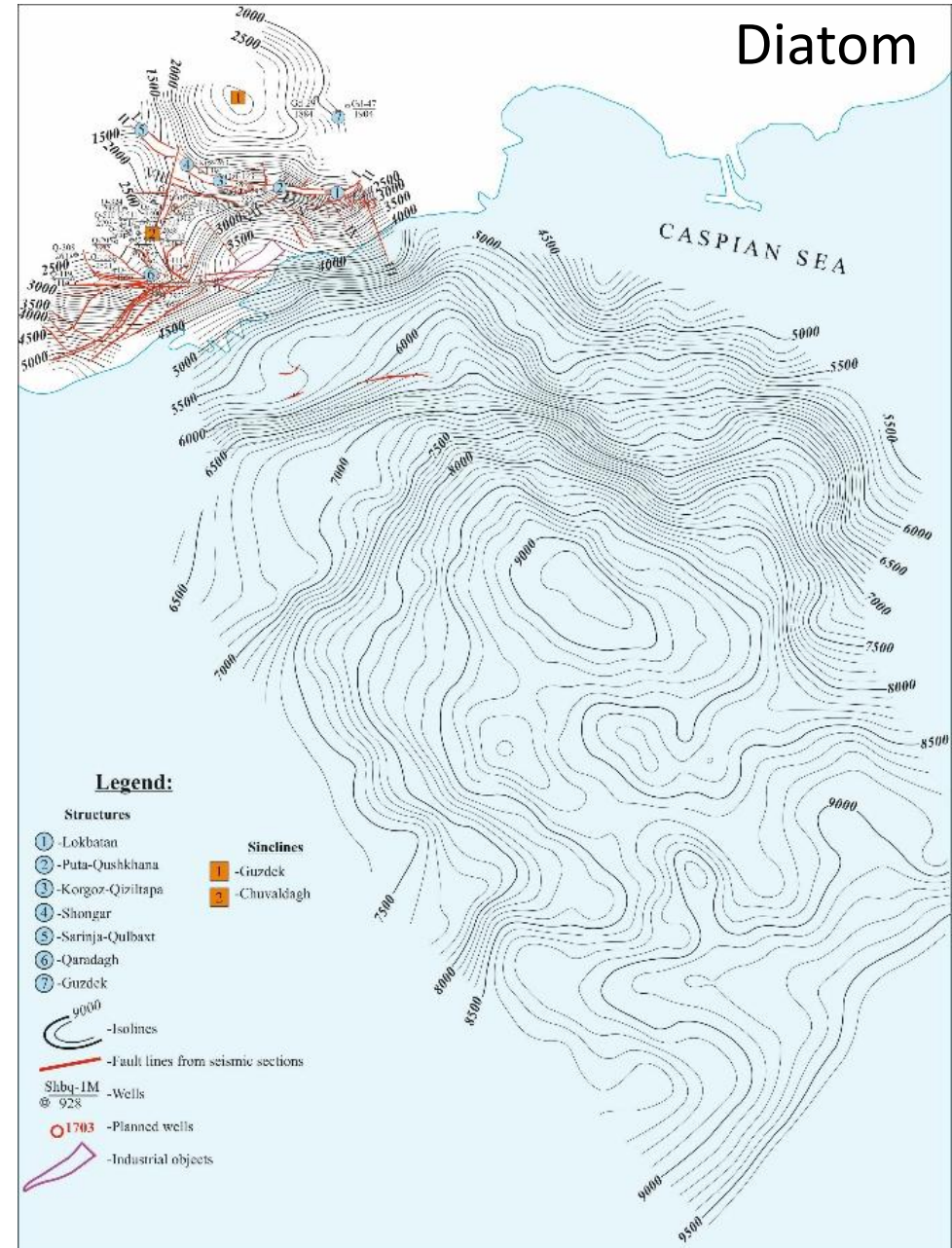
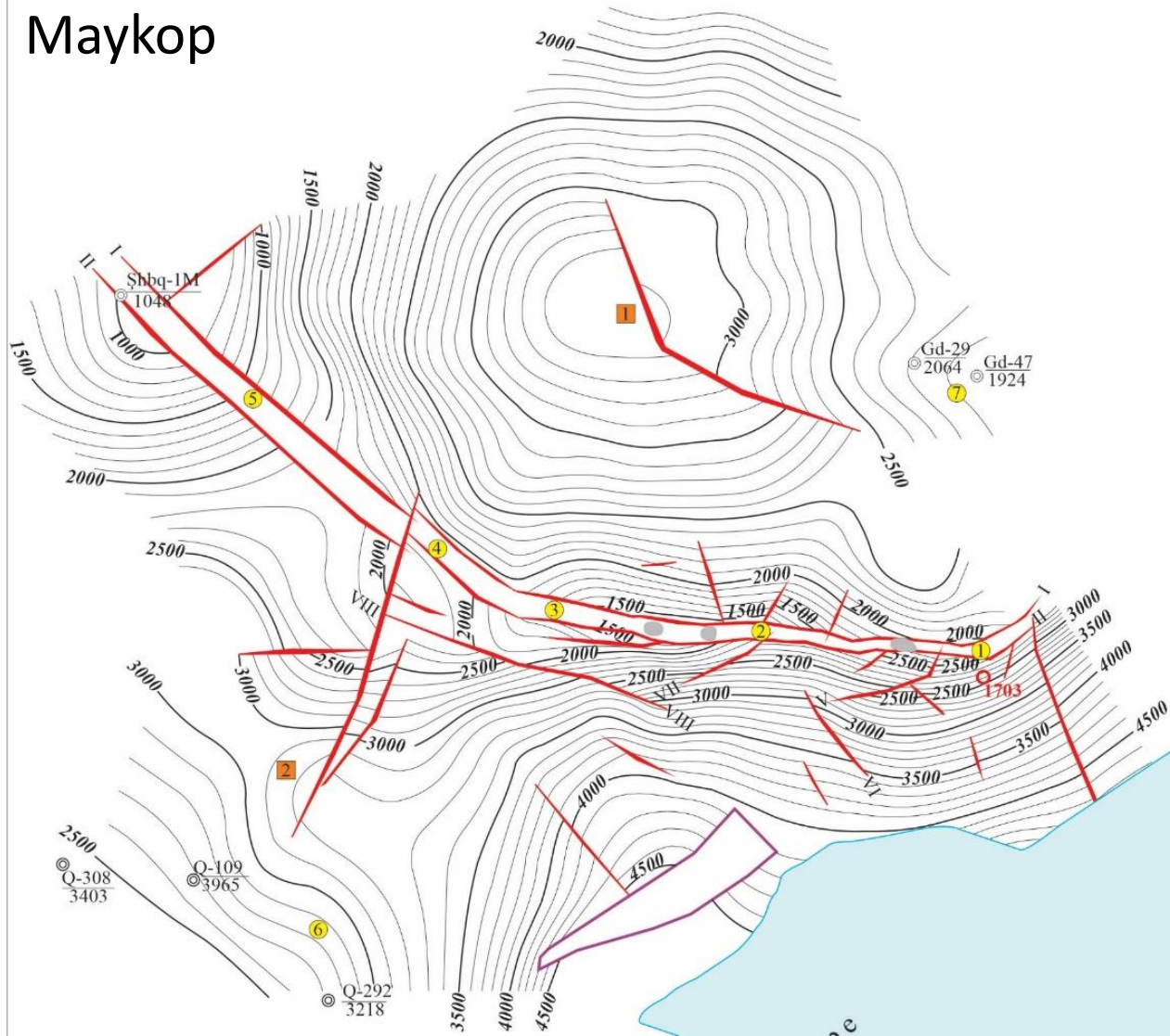


Garadagh Field seismic 2D sections



The onshore & offshore Diatom and Maykop top structural maps

Maykop



Conclusion

- Western Absheron zone shaped by Paleogene–Miocene tectonics; late Miocene deformations led to stratigraphic trap development;
- Neotectonic activity (Arabian plate motion: 15.2–22.2 mm/year) impacts HC migration & trap formation;
- Miocene formations show strong potential for stratigraphic reservoirs under Plio-Pleistocene cover.

