



Convergence between central segment of Greater and Lesser Caucasus

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Caucasus region is the relatively young part of the Alpine-Himalayan orogenic belt and represent northernmost edge of intracontinental collision of Arabia–Eurasia plates. Greater and Lesser Caucasus are major tectonic units and separated by west Rioni basin, Dzirula Massif and east Kura (Mtkvari) basin, with fold-thrust belt.

During last decades, Instrumentally recorded earthquakes revealed, that Greater and Lesser Caucasus margins are active, where north dipping thrust earthquakes Racha(6.9Mw, 1991 year), Barisako(6.4Mw, 1992 year) and flank of Lesser Caucasus Gori(6.2Mw, 1920 year) and south dipping thrust Baghdati(5.3Mw, 2011 year) produced.

Geodetic and Geologic observation Shows that major present-day crustal deformation are between lesser and greater Caucasus, where convergence rate increase from WNW to ESE (~ 2 to ~ 12 mm/yr). Deformation in the east part of Kura basin is accommodated to the north, foothill of the greater Caucasus, where north dipping thrust system presence, which is coherent with seismic activity. However in the west(42E - 44.5E) convergence not well constrained and slip distribution between Lesser and Greater Caucasus is ambiguous.

In this study we present combined previously published and new geodetic observation for present-day surface motions and constrain convergence and position of locked fault in the central segment of Greater and Lesser Caucasus.