

# Uraveli sequence: Implication for the basin formation during the Middle-Upper Eocene time, Achara-Trialeti, Georgia

T. Beridze, V. Alania, S. Khutsishvili, N. Popkhadze (1), R. Chagelishvili (1,2), O. Enukidze (1,2)

Geological Institute, Tbilisi, Georgia

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*The Achara-Trialeti fold and thrust belt is a major tectonic unit located in the eastern part of the Caucasus. Eocene volcano-sedimentary sequences within Achara-Trialeti are folded and thrust-faulted as a result of compressional – contractional tectonic regime during post – Upper Eocene time. From Jurassic to Paleogene the present Achara-Trialeti area was a backarc rift basin, produced by subduction of the Tethys Ocean northwards under Eurasian active margin.*

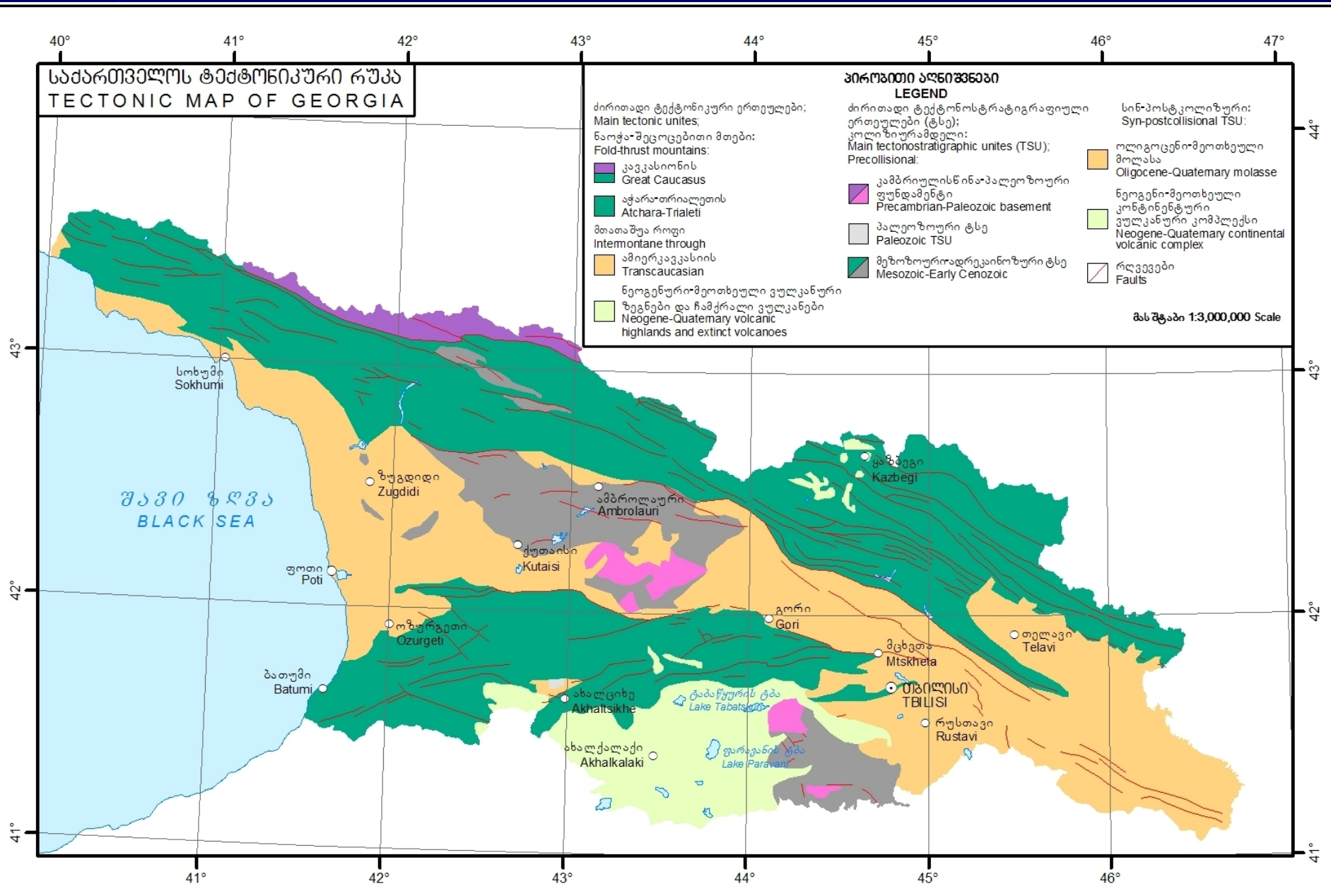
# Tectonic Map of Georgia

საქართველოს ტექტონიკური რუკა  
TECTONIC MAP OF GEORGIA

**პირობითი აღნიშვნები**  
**LEGEND**

ძირითადი ტექტონიკური ერთეულები: Main tectonic unites;	ძირითადი ტექტონოსტრატиграფიული ერთეულები (ტსე): კოლიზიურამდელი: Main tectonostratigraphic unites (TSU); Precollisional:	სინ-პოსტკოლიზიური: Syn-postcollisional TSU:
ნაოჭა-შეცოცებითი მთები: Fold-thrust mountains:	კამბრიულის ნინაპალეოზოური ფუნდამენტი Precambrian-Paleozoic basement	ოლიგოცენო-მეოცენული მოლასა Oligocene-Quaternary molasse
კავკასიონის Great Caucasus	პალეოზოური ტსე Paleozoic TSU	ნეოგენი-მეოცენული კონტინენტური ვულკანური კომპლექსი Neogene-Quaternary continental volcanic complex
ატარა-თრიალეთის Atchara-Trialeti	მეზოზოურადრეკანიზოური ტსე Mesozoic-Early Cenozoic	რღვევები Faults
მთათშუა როფი Intermontane through		
ამიერკავკასიის Transcaucasian		
ნეოგენურ-მეოცენული ვულკანური ზეგნები და ჩამქრალი ვულკანები Neogene-Quaternary volcanic highlands and extinct volcanoes		

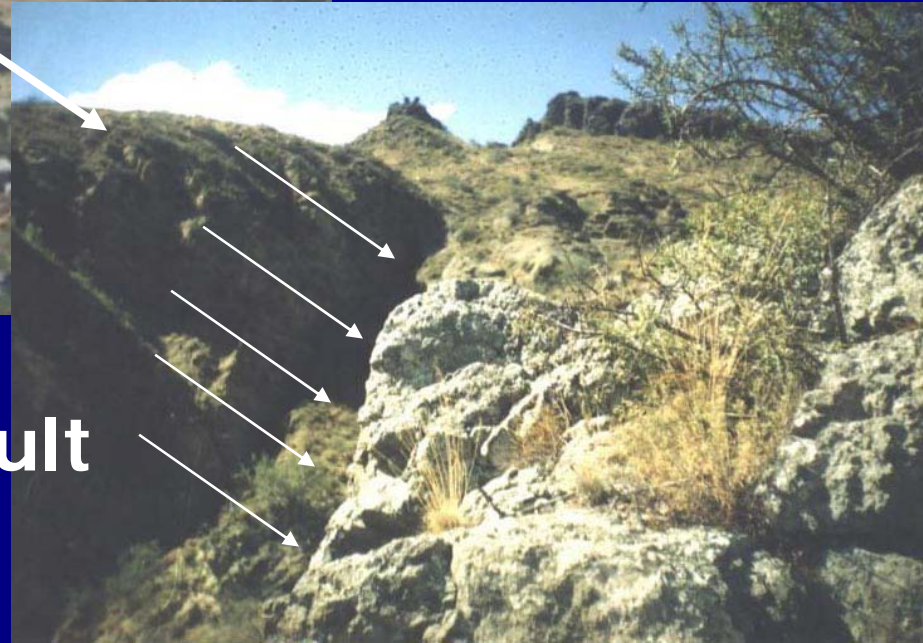
მასშტაბი 1:3,000,000 Scale



*Sedimentary successions, components and texture of volcanic and volcanoclastic components reflect two-phase subsidence history (fault controlled and thermal) and are divided into syn-rift and transitional megasequences.*

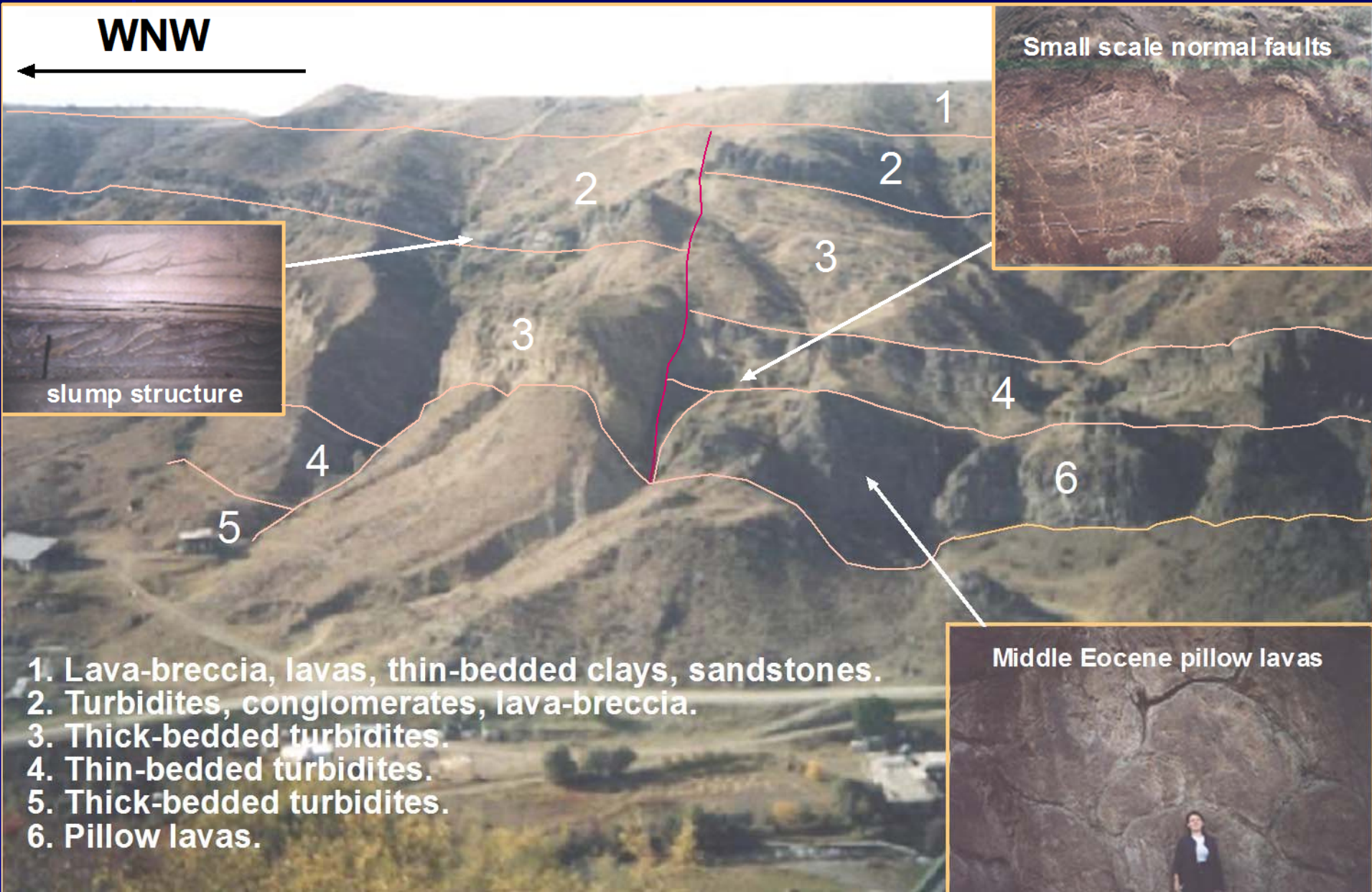
*The Lower-Middle Eocene sedimentary rocks (thin and thick turbidites, piroclastic flows and volcanoclastic turbidites) filling the basin during extensional tectonic regime accompanied by mostly low K tholeitic and calc-alkaline volcanic activity. The Upper Eocene sedimentary rocks (thin bedded turbidites) filling the basin during transitional regime accompanied by alkali volcanic activity.*

# Panorama picture of Urvaveli sequences (Upper part of Middle Eocene)



**normal fault**

**WNW**



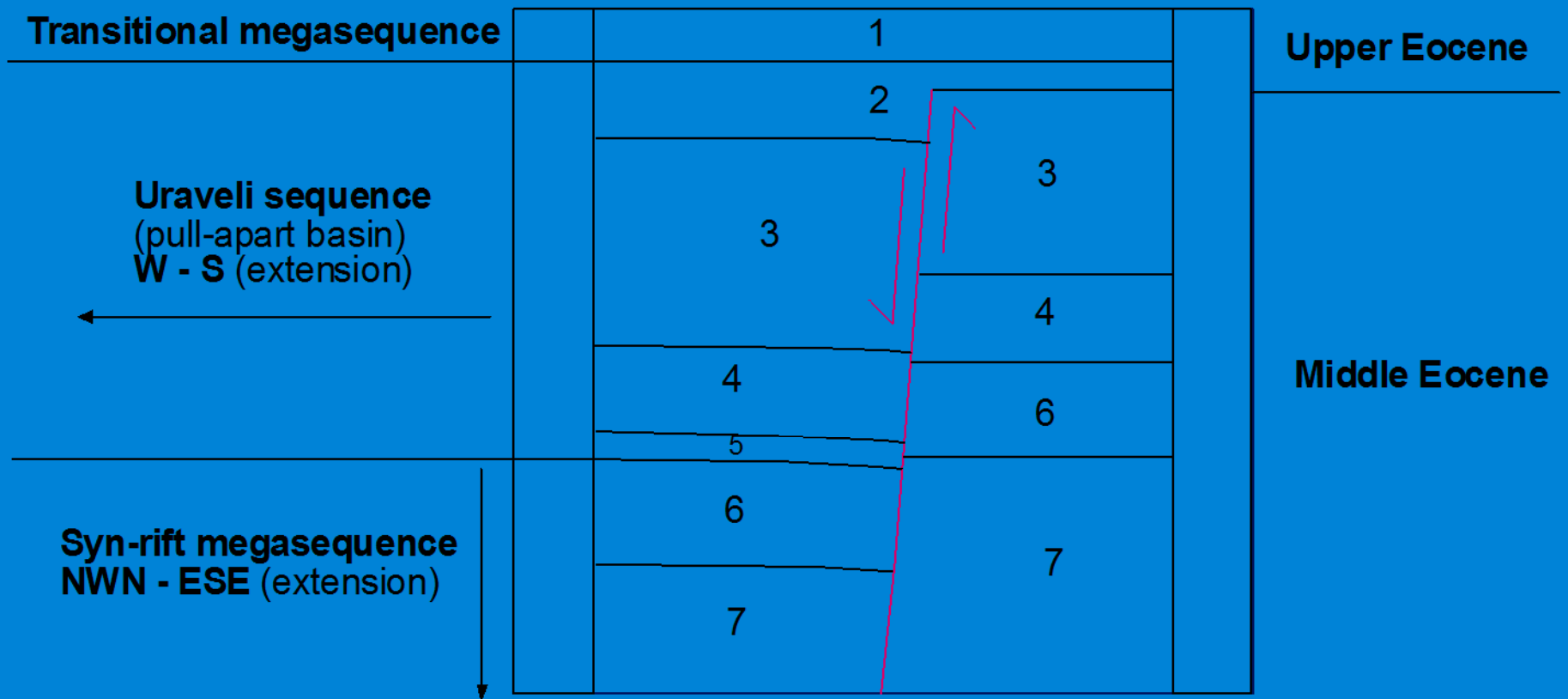
Small scale normal faults

slump structure

Middle Eocene pillow lavas

- 1. Lava-breccia, lavas, thin-bedded clays, sandstones.
- 2. Turbidites, conglomerates, lava-breccia.
- 3. Thick-bedded turbidites.
- 4. Thin-bedded turbidites.
- 5. Thick-bedded turbidites.
- 6. Pillow lavas.

# Schematic litho-stratigraphic column



1. Lava-breccia, lavas, thinbedded clays, sandstones.
2. Turbidites, conglomerates, lava-breccia.
3. Thickbedded turbidites.
4. thinbedded turbidites.
5. Thickbedded turbidites.
6. Pillow lavas.
7. Volcanogenic turbidites, lavas, debris flow.



*Based on sedimentary, stratigraphy and structural analyses within Akhaltsike basin (r. Uraveli and Mtkvari) in Middle Eocene-Upper Eocene times Uraveli sequence, represented by thin and thick bedded turbidites, separates from each after syn-rift and transitional megasequences.*

*Formation of this sequence was due to transpressional – extensional tectonic regime. In late Middle Eocene-early Upper Eocene were generating deeping to the north normal faults and related to them half-graben structures, which caused formation of asymmetric shape depocenters.*

*Such kind of tectono-sedimentation is common to the pullapart type basins.*

# Welcome to Georgia

