

# Main Metallogenic Zones of Precious and Rare Metals of the Black Sea – Caspian Sea Region Paste

**Dr., Prof. Adamia Sh**  
*Javakhishvili Tbilisi State University Nodia*  
*Institute of Geophysics*  
*Sh\_Adamia@hotmail.com*

**Dr. Prof. Gugushvili V**  
*Mining-Geologic Project LTD*  
*Gugushvili34@yahoo.com*

**Dr. Javakhidze D.**  
*Mining-Geologic Project LTD*

**Dr. Kutelia Z.**  
*Mining-Geologic Project LTD*

**PG. Sadradze N.**  
*Nodia Institute of Geophysics*

**Dr. Shavishvili I.**  
*Mining-Geologic Project LTD*

## ABSTRACT

The geologic and metallogenic evolution of the Black Sea-Caspian Sea region is largely determined by its position between the still converging Eurasian and Arabian plates, within the zone of a continent-continent collision. The region in the Phanerozoic-Early Cenozoic belonged to the Tethys and its Eurasian and Arabian margins. Within this convergence zones, there existed a system of island arcs, intra-arc rifts, back-arc basins etc. During syn-collisional (Oligocene-Middle Miocene) and post-collisional stages of the Late Alpine tectonic cycle, as a result of continent-continent complete collision present-day structure was formed. Deposits of precious and rare metals of the region are genetically connected with two magmatic activities: pre-collisional and syn-post collisional. Arc-type volcanic activity took place, mainly within Late Cretaceous-Eocene times in Eastern Pontides, Transcaucasus, Alborz and Sanandadj-Sirjan zones. This magmatic-hydrothermal activity caused formation of several ore deposits in Pontides, Georgia, Armenia Azerbaijan and Iran.

Late Cenozoic extrusive and intrusive complexes are widespread in the Great Caucasus, Lesser Caucasus, Turkey and Iran. They are exposed along the boundaries of the main terrains of the region. In Turkey, they construct two sublatitudinal branches. In the Lesser Caucasus and Iranian Azerbaijan, they outcrop along the Sevan-Zangezur-Garadag ophiolite structure. The southern magmatic belt extends along the Bitlis-Zagros suture. The northernmost, relatively short sublatitudinal branch of Neogene-Quaternary magmatic formations runs through the central part of the Great Caucasus. Several significant ore deposits of precious and rare metals are connected with these magmatic belts in Turkey, Caucasus and Iran.

Keywords: up to 10 keywords in 9pt Times New Roman.

## INTRODUCTION

The structure and geological evolution of the Black Sea-Caspian Sea region has been considered and discussed during past decades in a great number of publications. According to some authors (Adamia et al. 1977, 2008; Zakariadze et al. 2007), the region in the Late Proterozoic, Paleozoic, Mesozoic, and Early Cenozoic belonged to the now-vanished Tethys Ocean and its Eurasian and Gondwanan/Africa-Arabian margins. The continent-continent collision related to syncollisional (Oligocene-Early Miocene) and postcollisional

(Late Miocene-Quaternary) stages of the Late Alpine tectonic cycle caused inversion of the relief. Consequently, there were formed fold-and-thrust mountain belts, intermontane depressions and foredeeps. The marine basins were replaced by hemi-closed basins of euxinic type (Paratethys) and later on (Late Miocene) - by continental basins with subaerial conditions of sedimentation. Thus, the Transcaucasian transect closed c. 35-25 Ma ago.