

## **GEODYNAMIC REGIMES AND AU-AG-PGE-NI-CU POTENTIAL OF ACTIVIZED ANCIENT PLATFORMS**

AUGUSTINCZYK I.A. Central Research Institute of Geological Prospecting for Base and Precious Metals, Moscow, Russia.

Geology of volcanic and plutonic rocks, their major and trace element, rare earth element, Rb-Sr, Sm-Nd, Pb-Pb, Re-Os isotope geochemistry, precious metal tracers and ore potential allow to discriminate between groups of main magmatic associations during each step of any activation cycle within continental flood basalt provinces of ancient platforms: an earlier riftogenic subalkaline - picrite basalt (dolerite) group, flood tholeiite basalt (dolerite) - rhyolite group and postflood-basaltic alkaline-ultrabasic (to carbo-natite-kimberlite or alkaline granite) group.

Indicator magmatic formations and their geochemical characteristics allow to identify different mantle sources for flood basaltic provinces. Three of them were identified within continental areas: 1) an early riftogenic primitive (transite feeding), 2) a late depleted and contaminated (dis-continued feeding+liquid layering), and 3) the latest meta-somatized fertile (pulsed explosive feeding). Au-Ag-PGE-Ni-Cu-bearing intrusive complexes (East Siberia, Omeishan, Keweenawan) are products of the fertile mantle source and strong prechamber stratification of intermediate magmatic crust reservoirs fed by ascending stratified mantle diapirs.

Testing on ore-bearing and ore-free basic-ultrabasic intrusive complexes for ore-concentrating processes by geochemical tracers shows that they are forming in polycyclic provinces of activated platforms by low-rate decompression and speed feeding of magmas and their sulphides to intermediate reservoirs and intrusive chambers. Examples are Siberian province (Noril'sk, Russia), Omei-shan province (Limahe, Huili, China) and, possibly, ancient Keweenawan province (Sudbury and Duluth complexes, Canada). Analogous productive basic-ultrabasic complexes are thought to wait for their finding on the South-American platform.