

Laojunshan-Song Chay metamorphic core complex and its tectonic significance

YUPING LIU, LIN YE, CHAOYANG LI AND RUIZHONG HU

Institute of Geochemistry, Chinese Academy of Sciences,
Guiyang 550002, China

The Laojunshan-Song Chay metamorphic core complex "LSMCC", embodied as a southeast-toward semi-moon sharp, located at the border between China and Vietnam.

Metamorphic core complex

The LSMCC made up of core, middle-layer, cover, detachment faults, and mesozoic granite pluton.

The core constituted with the ductile deformed high-grade metamorphosed Proterozoic(?) Formation and the Sillurian granites "430Ma". From down to up, the granites deformed to mylonitized granitic gneiss, augen gneissic mylonite and granitic mylonitized gneiss.

The middle-layer constituted with the later- Proterozoic and the early Cambrian schistose mylonite, and the deformation in there are ductile to brittle.

The cover consistent with the Paleozoic low-grade meta-sedimentary Formation, and deformation in there are brittle. The detachment faults included ductile ones in the upper parts of core, ductile-brittle ones in the middle-layer and dominoes-style brittle ones in the cover.

Isochronal ages "230~200Ma" gained from the core, the middle-layer and the cover, indicated that regional deformation and metamorphism coincided to the Indosinia movement.

The intruding of mesozoic granites "110~80Ma", reinforced upheaval of the LSMCC.

Tectonic significance

The LSMCC is north to the Ailaoshan-Honghe belts, south to the fold-fault belts, island arc and Ocean island basaltic rocks belts bordering Guangxi and Yunnan, and west to the Babu-Phu Ngu ophiolites. All of these mention above, formed to a typical Turkic-type orogen between the Indochina massif and the southern China massif, suggested that upheaval of the LSMCC should included two stages at least. First, iso-collision detachment at the Indochina movement "230~200Ma". Second, iso-intruding upheaving at the Yanshan stage "110Ma".

Natural and enhanced concentrations of heavy metals in surface sediments of Nonoc Island, Philippines

JENERPER M. LO AND HAYAO SAKAMOTO

Department of Earth and Environmental Sciences, Faculty of Science, Kagoshima University, 1-21-35 Korimoto, Kagoshima-shi, Kagoshima 890-0065, Japan
(gsejml@moon.sci.kagoshima-u.ac.jp)

A Nickel mining located in Nonoc island, Philippines operated for several years and ceased. In this study, heavy metals (Cu, Zn, Mn, Ni, Co and Fe) in surficial sediments from Nonoc Island were analyzed to examine the distribution of heavy metals and by linear regression model, sediment samples exceeding the natural level were determined.

Twenty four sediment samples were collected around the island and the total heavy metals were analyzed by AAS. Clustering analysis extracted three distinct clusters among the samples. The first cluster and the second cluster grouped the sediments having high metal concentrations. The third cluster grouped the sediments having the lowest concentrations of Cu, Zn, Mn, Ni, Co and Fe, averages of 9.6, 39.4, 352, 516, 81.5 ppm and 3.5 %, respectively. This cluster is considered to represent the natural level heavy metals in the study area. Using the metal concentrations in the third cluster, linear regression was generated with Fe as reference metal. Sediments in the first cluster exceeds the upper 95% confidence level for the Ni regression and is considered to be enhanced level.