

COLLISION TECTONICS IN THE SOUTHEASTERN PART OF THE PENINSULAR INDIA: STRUCTURAL ANALYSIS FOR THE TERRAIN BOUNDARY BETWEEN THE DHARWAR CRATON AND THE NELLORE-KHAMMAM SCHIST BELT

1RAJNEESH KUMAR, 1OKUDAIRA, T., 1YOSHIDA, M. and 2DIVI, R.S.
1Department of Geosciences, Osaka City University, 3-3-138, Sugimoto, Sumiyoshi-ku, Osaka, Japan; 2 Geology Department, Kuwait University, P.O. Box 5969 Safat, Kuwait.

Evolutionary process of paleo-island arcs sandwiched by two different continents is a key to understand early growth process of continental crust. In southeastern part of Peninsular India, such sandwiched paleo-island arc are represented by high-pressure Nellore-Khammam schist belt (NKSB). The NKSB is bounded by Eastern Ghats craton (EGC) on the east and Dharwar craton (DC) on the west. Structural characteristics of the boundary zone between the NKSB and DC have been studied here. There are four deformation events in the rocks of the NKSB, whereas two deformation events in the Pakhal Supergroup (PSG) which is an intra-cratonic sediment within the DC during Mesoproterozoic can be recognized. Deformation features of the last phase in the NKSB are identical to the PSG, although earlier stages of deformation cannot be traced in the PSG. Therefore, during the last phase of the NKSB rocks, both (NKSB and PSG) were deformed together during juxtaposition. The deformation structures of the last phase are well observed near the boundary between NKSB and PSG, and then strain localization was occurred around the boundary. Strain picture of the terrain boundary zone(= strain localized zone) is characterized by strain configuration of which maximum axis of strain ellipsoid X located to vertical and minimum axis of strain ellipsoid Z directed to horizontal. These strain pictures indicate that orogen-normal compression and vertical extension. The orogen-normal compression may be related to collision of the DC to the EGC, because of age similarity between the last phase deformation and the collision (ca. 1.3-1.2 Ga).