

Paper Number: 1487

Neoproterozoic strata–tectonic–magmatic event sequence of the eastern Jiangnan Orogen, southeast China

Xinqi Yu, Ziwei Chen, Xiu Liu, Junlai Liu, Shuzhao Zhou, Zisen Wang

China University of Geosciences, Beijing 100083, P.R. China

Contrasting views are existing on the understanding of the origin and evolution of the metamorphic basement of the Jiangnan Neoproterozoic Orogen of Southeastern China [1, 2]. Based on the recent detailed field work, the authors present aspects pertaining to the geological and tectonic aspects of the area and highlight the differences in the nature of deformation of both the northern and southern sides of the east Jiangnan Orogen and the nature of contact relationship of cordierite-bearing granodiorites and low-grade metamorphic rock series. The chronological evolution of the Neoproterozoic strata–tectonic–magmatic event sequence of the border region of Zhejiang, Jiangxi and Anhui Provinces in the east Jiangnan Orogen was constrained with U-Pb age geochronology.

The metamorphic basement in the east Jiangnan Orogen was formed in late Mesoproterozoic [3] and is mainly constituted of the Shangxi and Likou Groups [4] in the north and the Xikou Group and Jingtan formation in the south [5]. Obvious features of the rock series were shown on the outcrops separately in south and north. The northern metamorphic series is stratified and the relationship between the upper and lower strata is well understood. Further, the stratigraphic sequence is also well established. However, the southern metamorphic series exhibit development of deformational fabric and the traces of the original bedding has been completely obliterated due to intense deformation. Thus the horizontal contrast of the two series must be based on age data.

A significant contact aureole in the form of a wide hornfels zone is noticed around Shangxi Group due to the intrusion of the Xucun granodiorite around 835 Ma. Field studies indicated the presence of a number of wall rock xenoliths hornfels facies around the contact of the Shangxi Group and the intrusive granodiorite confirming the intrusive relationship between the granodiorite Xucun pluton and the host Shangxi Group. The ages of the bimodal dykes which intrude both the Xucun pluton and Shangxi Group are similar as both the volcanic rock in the Puling formation of the Likou Group and in the Jingtan formation in the south. They are all covered by the Nanhuaan Xiuning formation with a high angle unconformable surface [6, 7].

The redefinition of the Neoproterozoic strata–tectonic–magmatic event sequence in east Jiangnan Orogen will provide a factual basis for studying the formation and evolution of Jiangnan Orogen.

References:

- [1] Gao L Z et al. (2008) Geological Bulletin of China 27(10): 1744-1751
- [2] Wang X L et al. (2008) Gondwana Research 14: 355-367
- [3] Wang C Z et al. (2015) Acta Petrologica et Mineralogica 34(3): 309-321
- [4] Wang X L et al. (2007) Precambrian Research 159: 117-131
- [5] Wu R X et al. (2007) Geological Journal of China Universities 13(2): 282-296
- [6] Wang D et al. (2013) Precambrian Research 233: 223-236
- [7] Yu X Q et al. (2011) Acta Geologica Sinica 85(6): 1373-1389

