

**Zircon U-Pb geochronology of
Precambrian metasedimentary rocks
from Cathaysia Block in
northwestern Fujian Province, South
China: Constraint on their ages and
paleogeographic implication**

ZHAO-YAO YANG¹, SHAO-YONG JIANG^{1,2}

¹State Key Laboratory of Geological Processes and Mineral Resources, Collaborative Innovation Center for Exploration of Strategic Mineral Resources, Faculty of Earth Resources, China University of Geosciences, Wuhan 430074, China. Email: 861384337@qq.com

²State Key Laboratory for Mineral Deposits Research, Department of Earth Sciences, Nanjing University, Nanjing 210093, China. Email: Shyjiang@cug.edu.cn

The Wuyi region in northwestern Fujian is one of the most important area that occurs Pre-Palaeozoic strata in the Cathaysia Block of South China. Metavolcano-sedimentary and metasedimentary rocks of different types, ages and metamorphic grades (granulite to upper greenschist facies) are present in this region. The youngest population of detrital zircons of five metasedimentary rock samples from Dikou Formation, Mamianshan and Mayuan Group shows a late Neoproterozoic age of 750 to 585 Ma. In addition they all show similar distribution patterns with major age populations at ~2450 Ma, 1100-900 Ma and 850-750 Ma, which is similar to age distribution of the Ediacaran sedimentary rocks in South China. Therefore, we suggest that these metasedimentary rocks is Ediacaran in age.

Two metasedimentary rock samples from Mayuan Group show similar age distribution pattern with most ages concentrating between 830 and 760 Ma (peak at ~800 Ma), which is similar to Cryogenian sedimentary rocks in South China, but significantly different from Ediacaran sedimentary rocks. So these two metasedimentary rocks are Cryogenian in age. Detrital zircons (~800 Ma) from the Cryogenian metasedimentary rocks are mostly euhedral, which was probably derived from Cathaysia Block where many 700 to 900 Ma magmatic rocks are widespread. In comparison with the tectono-magmatic history and compositions of sedimentary rocks in western Laurentia, northern margin of India (Himalayan region) and western Australia, we suggest that the Ediacaran sediments may have originated mainly from the Himalayan region, and the Cathaysia Block was close to the west of Himalayan region during late Ediacaran.