Geophysical Research Abstracts
Vol. 20, EGU2018-11431, 2018
EGU General Assembly 2018

Accretionary processes of the central Beishan (southern Altaids): Constraints from structural deformation and 40Ar-39Ar geochronology

Dongfang Song, Wenjiao Xiao, and Chunming Han
Institute of Geology and Geophysics, Chinese Academy of Sciences, China (dfsong@mail.iggcas.ac.cn)

The Beishan Orogenic Belt in NW China is a key area for understanding the accretionary tectonics of the southern Central Asian Orogenic Belt. The polarity and timing for subduction and accretion of the central Beishan are much debated. The pervasively deformed metamorphic complexes and associated intrusive rocks from the central segment of Beishan are keys to illuminating the accretionary history of Beishan Orogenic Belt. In order to put constraints on the timing of metamorphism-deformation for the rocks in the central Beishan, this study carried out field geological, microstructural and 40Ar-39Ar geochronological studies on these rocks. The rocks from the central Beishan have undergone widespread ductile shearing deformation. 40Ar-39Ar dating on four samples yield respective plateau ages of 323.1 $\pm$ 3.6, 296.0 $\pm$ 3.7, 261.2 $\pm$ 3.1 and 209.2 $\pm$ 4.0 Ma, which are younging from the north to the south. Combined with the spatial-temporal distribution of major tectonic units, these data reveal a northward subduction of oceanic plate and southward accretion of the orogen during the Paleozoic-early Mesozoic in the central Beishan area. The last orogenic pulse of the Beishan may have extended to the Triassic.