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**Metamorphic zones and constraining on timing of the major metamorphism event in the Qinling Complex, western Henan Province**

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Through detailed field and indoor observation and analyses, the Qinling Complex in western Henan Province can be discerned several metamorphic zones parallel to the orogenic belt. The metamorphic zones increase gradually from both the southern and northern margins to the core of the complex, and the southern part is especially distinguished in the northward increasing grades of biotite, garnet, kyanite and sillimanite zones in the metapelites, and the highest orthopyroxene zone in the metabasic rock in the central. The complex is not wholly granulite facies metamorphosed as conventionally considered, and the so-called retrograde textures from granulite to amphibolite facies metamorphism have not been noticed. LA-MC-ICPMS data of zircons from various rocks demonstrated that many zircons have experienced severe intensive reworking and resetting in isotopic system. Nonetheless, the authors manage to constrain the major metamorphism event older than  $484\pm 3$  Ma through the intrusive granite and pegmatite in the gneisses, and might be related with the earlier eclogite facies metamorphism. As regards to the feature of major metamorphism (except the eclogite facies), the complex is well compared with the typical Barrowian metamorphism and no substantial crustal thickening can be deduced. The Qinling Complex is rather similar to that of the High Himalayan Crystalline rocks in that the channel flow model is the quite possible mechanism in the geological process.

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