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楼子店变质核杂岩韧性变形作用的 $^{40}\text{Ar}/^{39}\text{Ar}$ 年代学约束 [点此下载全文](#)

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摘要:

楼子店变质核杂岩以拆离系中韧性剪切与脆性拆离运动学不一致, 有别于北美科迪勒拉变质核杂岩。构造分析表明, 核杂岩两侧拆离系中韧性剪切具有统一的上盘向北东的剪切特征。采自核杂岩两侧韧性剪切带中的3个黑云母单矿物 $^{40}\text{Ar}/^{39}\text{Ar}$ 年龄介于126~128Ma之间, 西侧韧性剪切带中1个角闪石单矿物 $^{40}\text{Ar}/^{39}\text{Ar}$ 年龄为134Ma, 4个样品的坪年龄与对应的等时线年龄一致。角闪石和黑云母坪年龄记录的韧性剪切作用的时限为126~134Ma, 并且显示出韧性伸展的特点。研究表明楼子店变质核杂岩两侧的韧性剪切带形成时间一致并具有相同的运动学, 韧性剪切作用是核杂岩形成演化的一个重要阶段, 这为核杂岩形成的韧性伸展阶段的约束提供了年代学证据。

关键词:  [\$^{40}\text{Ar}/^{39}\text{Ar}\$ 年代学](#) [韧性变形作用](#) [拆离断层系](#) [楼子店变质核杂岩](#)

40Ar / 39Ar Age Constraints on the Ductile Deformation of the Detachment System of the Louzidian Core Complex, Southern Chifeng, China [Download Fulltext](#)

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Abstract:

The kinematics of ductile shearing is not compatible with that of detachment faulting in the detachment systems of the Louzidian metamorphic core complex, which is different from the Cordillera metamorphic core complex in North America. Structural analysis of the detachment systems on the two sides of the core complex shows consistent top-to-the-northeast ductile shearing. Three biotites separated from mylonitic rocks in the detachment systems on the two sides of the core complex yielded  $^{40}\text{Ar}/^{39}\text{Ar}$  plateau ages between 126~128 Ma and one hornblende separated from mylonitic rocks on the west side yielded a  $^{40}\text{Ar}/^{39}\text{Ar}$  plateau age of 134 Ma.  $^{40}\text{Ar}/^{39}\text{Ar}$  plateau ages, which are concordant with corresponding isochronal ages, represent a range of ductile shearing and suggest ductile extension. Studies show that the ductile shear zones on the two sides of the Louzidian core complex have the same formation and kinematics and ductile shearing is an important stage of the formation and evolution of the core complex, which provides chronic evidence for the constraints of ductile extension.

Keywords: [40Ar / 39Ar age](#) [ductile deformation](#) [detachment system](#) [Louzidian metamorphic core complex](#)

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