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内蒙古大青山逆冲推覆体系中中生代逆冲构造活动的 ^{40}Ar - ^{39}Ar 定年

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摘要:

内蒙古大青山呼和浩特段北侧发育3条走向北东东、指向北西的逆冲断层, 并与被其分割的3个逆冲席体及一个原地系构成大青山逆冲推覆体系。逆冲断层上盘底部发育较深层次的糜棱岩, 下盘顶部多发育低温的千糜岩。本研究在构造地质调查基础上, 结合宏-微观岩石矿物学分析, 采用 ^{40}Ar - ^{39}Ar 定年对该逆冲体系的活动时间进行约束。逆冲断层带内3个千糜岩绢云母 ^{40}Ar - ^{39}Ar 年龄范围为120~119Ma, 另一样品给出了120Ma的概率统计峰值年龄。千糜岩为低温同变形变质产物, 细粒绢云母为同变形新生矿物, 其 ^{40}Ar - ^{39}Ar 年龄可代表变形年龄。侵入在断层内弱变形的花岗闪长岩为同构造晚期侵入, 角闪石 ^{40}Ar - ^{39}Ar 年龄限定其冷却时间下限为121Ma, 概率统计峰值年龄为119Ma。逆冲断层上盘底部发育较高温的糜棱岩, 而低温千糜岩的形成时间应属于变形后期。因此, 120Ma至119Ma期间, 大青山逆冲推覆体系的逆冲作用应已是处于变形晚期。

英文摘要:

The northern Daqingshan orogen in Hohhot area is tectonically characterized by a northwest-directed thrust-nappe system, the Daqingshan thrust-nappe system, which consists of three east-northeast trending thrusts, three nappes and an autochthon. Higher-grade mylonite was formed at the bases of the hanging walls of the thrusts, while lower-grade phyllonite was produced on the top of the footwalls. Based on structural geological investigation and integrating macro-/micro-analyses of petrology and mineralogy, this study adopts ^{40}Ar - ^{39}Ar dating method to constrain the deformation time of the Daqingshan thrust-nappe system. Three sericite samples of phyllonite give a ^{40}Ar - ^{39}Ar age range of 120~119Ma and the other sample presents a peak age of 120Ma in the age-probability spectrum. Phyllonite was formed by a deformation at low temperatures and the fine-graded sericite in it was new-born syn-deformational mineral, therefore the sericite ^{40}Ar - ^{39}Ar age can represent the deformation time very well. A weak-deformed granodiorite dike intruding the thrust indicates an emplacement in a late deformational stage, and its hornblende ^{40}Ar - ^{39}Ar dating presents a lower-limitation age of 121Ma for the cooling of and the statistical peak age is also 119Ma. The lower-temperature phyllonite should be formed in a late stage of the deformation because higher-temperature mylonite developed at the bases of the nappes. Therefore, the thrusting of the Daqingshan thrust-nappe system must have been in its late deformational stage during the time from 120 to 119Ma.

关键词: [大青山逆冲推覆体系](#) [逆冲作用](#) [千糜岩](#) [\$^{40}\text{Ar}\$ - \$^{39}\text{Ar}\$ 定年](#)

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