



吴中海, 吴珍汉. 燕山及邻区晚白垩世以来山脉隆升历史的低温热年代学证据[J]. 地质学报, 2003, 77(3): 399-406

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基金项目: 国土资源基础科研项目“首都圈新生代构造-地貌演化及环境灾害效应”(编号992026), 国家攀登项目

DOI:

摘要点击次数: 146

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摘要:

本文根据以裂变径迹测年为主的低温热年代学方法, 认为燕山及邻区在晚白垩世进入区域性伸展构造环境的6次强烈差异升降运动, 分别发生在120~105Ma、95~85Ma、60~50Ma、38Ma左右、25~20Ma和10~5Ma, 造山而在相邻两次强烈差异升降运动期之间的相对构造稳定期, 则形成了燕山—太行山地5期夷平面以及周缘盆地多间晚中新世以来的快速差异升降运动导致燕山及邻区现今盆—山构造—地貌格局。

关键词: [燕山](#) [晚白垩世](#) [山脉隆升](#) [低温热年代学](#) [裂变径迹](#) [夷平面](#) [地壳均衡](#)

Low-temperature Thermochronological Analysis of the Uplift History of the Yanshan Mountain and Its Neighboring Area [Download Fulltext](#)

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Abstract:

The low-temperature thermochronological technique was used to study the uplift and denudation history of the Yanshan Mountain and its neighboring area, which has revealed distinct periods of accelerated crustal exhumation during the Mesozoic. The results show that the fission track ages range from 115 Ma to 50 Ma (zircon) and from 120~105 Ma, 95~85 Ma, 60~50 Ma, 38 Ma, 25~20 Ma and 10~5 Ma. The uplift-cooling event during 120~105 Ma activity of low-angle detachment normal fault in the Yanshan Mountain and its neighboring area and caused approximately 2.2 km of crustal exhumation. The denudation rates were approximately 0.2 mm/a during the rapid uplift and 0.01 mm/a during the slow uplift. The stage of slow uplift corresponded with the episodes of planation surfaces of the Yanshan Mountain and its neighboring area and five regional Cenozoic basins in North China. On the basis of the isostasy theory, the mean altitude in the past was higher than the present elevation in the Yanshan Mountain.

Keywords: [Yanshan Mountain](#) [mountain uplift](#) [fission track](#) [planation surface](#) [isostasy](#)