

马鹏飞,王立成,冉波. 2013. 青藏高原中部新生代伦坡拉盆地沉降史分析. 岩石学报, 29(3): 990-1002

青藏高原中部新生代伦坡拉盆地沉降史分析

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基金项目: 本文受国家重点基础研究发展计划(973)项目(2012CB822000)、国家自然科学基金项目(41172129)和青藏地区陆相盆地油气资源调查与评价项目(1212011221103)联合资助。

摘要:

新生代伦坡拉盆地位于青藏高原中部,拉萨地体与羌塘地体间班公湖-怒江缝合带之上。伦坡拉盆地及缝合带上其他陆相盆地的形成反映了班怒带缝合之后的再活化过程。盆地内部主要沉积了始新世-中新世牛堡组与丁青湖组两套地层,虽然后期的风化剥蚀和地表第四纪覆盖对获取野外露头资料造成了一定影响,但20世纪50年代以来大规模的钻井勘探为研究区域大地构造和沉积盆地演化提供了重要依据。为重建伦坡拉盆地的沉降史,本文对盆地中11条钻井剖面 and 1条实测剖面进行了回剥分析。沉降曲线显示盆地经历了两个明显不同的沉降阶段和一个缓慢抬升阶段。初始的快速沉降开始于始新世,在区域伸展作用下上地壳破裂形成半地堑型盆地,并开始在半深湖-深湖环境中沉积牛堡组地层。这一过程中伴有左行走滑。渐新世早期,受构造活动之后热量传导的影响,前期快速沉降被缓慢热沉降取代,沉降中心向北东方向迁移,并在半深湖-深湖环境下沉积了青湖组地层。与此同时印度板块不断向北俯冲,在挤压作用下热沉降逐渐减弱并提前结束。中新世波尔多阶基底开始构造抬升,盆地不断发生挤压变形,并最终形成了现今的构造格局。

英文摘要:

The Cenozoic Lunpola basin is located in the Bangong-Nujiang sutures (BNS) between Lhasa and Qiangtang terranes of central Qinghai-Tibet Plateau. Together with other continental basins in the sutures, Lunpola basin which deposits two Eocene-Miocene formations of Niubao and Dingqing reflects the re-activation of BNS. Despite the later erosion and extensive Quaternary coverage, large-scale drilling exploration since the 1950s provides fundamental data base for the study of the regional tectonic and sedimentary basin evolution. To reconstruct the subsidence history of Lunpola basin, 1 measured and 11 drilling sections were backstripped in this study. Subsidence curves indicate that the basin was characterized by two distinct phases of subsidence and a slow uplift phase. The initial rapid subsidence occurred in the Eocene, during which Niubao Formation was deposited in a shore-shallow lake environment of half-graben which was formed by fracture of upper crust in the regional extension with sinistral strike-slip. Slower subsidence which is consistent with heat conduction following the mechanical extension took place in Oligocene along with deposition of Dingqing Formation in a semi deep-deep lake environment, and the subsidence center migrated towards the north-east in this period. At the same time, in the compression settings produced by northward subduction of the Indian plate thermal subsidence gradually weakened and ended prematurely. The basement began to uplift in Burdigalian Miocene, basin was compressionally deformed, and eventually formed the present tectonic framework.

关键词: [伦坡拉盆地](#) [沉降史](#) [演化分析](#) [新生代](#) [青藏高原](#)

投稿时间: 2012-09-05 最后修改时间: 2013-01-09

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