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中文摘要:基于对库车褶皱逆冲带坎亚肯褶皱发育的小尺度构造的特征和相互叠加、切割关系的分析,认为该构造形成于新生代,经历了三个阶段,即平行层面的挤压缩短作用阶段、弯滑与弯流褶皱作用阶段和逆冲断层改造作用阶段,断层滑动数据反演和古应力恢复的结果表明,控制整个变形过程的构造应力场最大主应力方向σ1(即构造缩短方向)集中分布在NNW-SSE向,断层面上薄层方解石晶体的ESR测年结果显示,断层活动时间不晚于2.1Ma.该区这一构造变形发生在上新世末以前,是在同一稳定应力场下同一次构造挤压产生的新进式序列变形结果,对于克依构造带的构造圈闭最终定型起着决定性作用.

中文关键词:库车坳陷 克依构造带 小尺度构造 变形序列 古应力恢复 ESR测年

Progressive Structural Deformation and ESR Dating Ages of Kanyaken Anticline in Kelasu-Yiqikelike Structural Belt of the Kuga Depression

Abstract:Medium and minor structures in field record a progressive deformation sequence of an entire fold-and-thrust belt. Observations of these structures and their overprinting relationships in Kanyaken fold of the Kuqa fold and thrust belt unravel three stages of compressive deformation in Cenozoic, i.e., layer-parallel shortening, flexural-slip and flexural-flow folding, and thrusting modification. Meanwhile, the inversion of the fault-slip data from different stages and the paleostress reconstruction show that the maximal orientation of σ_1 , i.e., the structural shortening direction, is NNW-SSE during all the compressive deformations. ESR dating of the faults shows that the faulting had taken place before the end of Pliocene. It is thus concluded that the deformations of three stages were produced in the same stable stress field progressively, and that they are progressive sequential deformations rather than poly-phase compressive deformations. The compressive deformation that took place mainly in $12\sim5$ Ma did play a crucial role in the final formation of the structural traps in the Kelasu-Yiqike like structural belt.

keywords:Kuga depression Kelasu-Yigikelike Structural Belt minor structure deformation sequence Palcostress reconstruction ESR dating

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