岩石学报
ACTA PETROLOGICA SINICA

刘鑫,李三忠,索艳慧,刘晓春,刘恩山,戴黎明. 2010. 桐柏碰撞造山带及其邻区变形特征与构造格局. 岩石学报, 26(4): 1289-1302

桐柏碰撞造山带及其邻区变形特征与构造格局

作者	单位	E-mail
刘鑫	中国海洋大学海洋地球科学学院, 青岛 266100	lxn0532@126.com
李三忠	中国海洋大学海洋地球科学学院, 青岛 266100	sanzhong@ouc.edu.cn
索艳慧	中国海洋大学海洋地球科学学院, 青岛 266100	
刘晓春	中国地质科学院地质力学研究所, 北京 100812	
刘恩山	中国海洋大学海洋地球科学学院, 青岛 266100	
戴黎明	中国海洋大学海洋地球科学学院, 青岛 266100	

基金项目：国家“973”项目(2009CB825006)、中国地质调查局项目(1212010711812)和教育部新世纪人才项目(NCET-06-0595)联合资助

摘要：

桐柏碰撞造山带及其邻区可以划分为九个大地构造单元,自北向南分别是:华北克拉通南缘岩石构造单元--宽坪岩群、具弧后盆地性质的二郎坪岩石构造单元、具岛弧性质的秦岭杂岩单元、龟山岩组和南湾岩组构成的俯冲前缘楔构造带、构造混杂岩带、桐柏北部高压岩片单元、桐柏核部杂岩单元、桐柏南部高压岩片单元以及随州构造变形带。根据详细的构造解析以及新的地质年代学资料,本文将中生代以来的构造变形划分为五幕,前两幕变形主要发育在构造混杂岩带以南的各个岩石构造单元中,之后的三幕变形则波及整个研究区。第一幕变形的时间约为255~238Ma,以发育区域上透入性的片理及北西西向的拉伸线理为主,并导致了高压岩片早期自西向东的挤出。第二幕变形的时间约为230~215Ma,以自北向南的逆冲推覆构造为主,使得高压岩片进一步垂向抬升。第三幕变形应早于下侏罗统,以近北西西向的宽缓褶皱为主要特征,该幕变形期间桐柏核部杂岩及其两侧高压岩片单元发生同步的抬升。第四幕变形大致发生在140~130Ma之间,主要表现为桐柏核部杂岩两侧走滑型韧性剪切带的活动,桐柏核部杂岩表现出向东的挤出。第五幕变形发生在120~80Ma,表现为北西向及北东向的脆性断裂活动,并切割以上所有构造形迹。桐柏高压岩片的抬升剥露受多幕变形控制,呈阶段性的抬升。

英文摘要：

The Tongbai collisional orogen and its neighbors can be divided into nine tectonic units. They are, from north to south, the southern margin of the North China Craton tectonic unit-the Kuanping Group, the Erlangping tectonic unit with the nature of back-arc basin, the Qinling complex unit with the nature of island arc, the Guishan Group and the Nanwan Group composed of leading-edge wedge of the subduction zone, the tectonic mélange zone, the northern high-pressure (HP) unit, the Tongbaishan high-grade complex, the southern HP unit, the Suizhou tectonic deformation zone. According to structural analysis and new geochronological evidences, five distinct episodes of deformation (D_1-D_5) are distinguished in this area since the Mesozoic. The former two-episode of deformation developed in the various tectonic units south of tectonic mélange zone, and the latter three-episode of deformation developed in all units of this area. The time of the D_1 episode is about 255~238Ma. D_1 formed regional penetrative foliations and the WNW-oriented stretching lineations, and led to the early stage of extrusion of the high-pressure rocks from west to east. D_2 maybe occurred at some time about 230~215Ma, characterized with the southward-directed thrust which made the high-pressure rocks further vertical uplift. D_3 should be earlier than Lower Jurassic, and nearly WNW trending open folds as the main characteristics of this episode, during which the Tongbaishan high-grade complex and the high-pressure rock units were synchronously uplift. D_4 occurred in roughly between 140~130Ma, characterized with the activities of the ductile shear zones, and during this episode the Tongbaishan high-grade complex was extruded to the east. D_5 occurred in 120~80Ma, characterized with the activities of NW and NE trending brittle faults which cut all of the above structural features. The exhumation of Tongbaishan high-pressure rocks are controlled by many episodes of deformation, displaying generally staged uplift and exhumation.

关键词：桐柏山 中生代 变形样式 剥露机制 高压岩石

投稿时间： 2009-06-12 最后修改时间： 2010-03-08

黔ICP备07002071号-2
主办单位：中国矿物岩石地球化学学会
单位地址：北京9825信箱/北京朝阳区北土城西路19号
本系统由北京勤云科技发展有限公司设计