

王松,李双应,杨栋栋,何刚,赵大千. 2012. 天山南缘石炭系-三叠系碎屑岩成分及其对物源区大地构造属性的指示. 岩石学报, 28(8): 2453-2465

天山南缘石炭系-三叠系碎屑岩成分及其对物源区大地构造属性的指示

作者	单位	E-mail
<a href="#">王松</a>	<a href="#">合肥工业大学资源与环境工程学院, 合肥 230009</a>	
<a href="#">李双应</a>	<a href="#">合肥工业大学资源与环境工程学院, 合肥 230009</a>	<a href="mailto:lsysteven@126.com">lsysteven@126.com</a>
<a href="#">杨栋栋</a>	<a href="#">合肥工业大学资源与环境工程学院, 合肥 230009</a>	
<a href="#">何刚</a>	<a href="#">合肥工业大学资源与环境工程学院, 合肥 230009</a>	
<a href="#">赵大千</a>	<a href="#">合肥工业大学资源与环境工程学院, 合肥 230009</a>	

基金项目: 本文受中石化海相前瞻性研究项目(432263)和国家自然科学基金(40972082、40572076)联合资助

摘要:

本文通过对天山南缘石炭系-三叠系碎屑岩岩石学特征和地球化学特征的分析,揭示了研究区石炭系-三叠系碎屑岩的物质组分特征及其物源区的大地构造背景。碎屑岩的岩石学、地球化学分析表明,天山南缘石炭系、三叠系砂岩成分成熟度和结构成熟度均不高,杂基含量较高,从石炭系至三叠系砂岩不稳定组分依次增加。石炭系、二叠系具有相似的稀土元素含量特征,三叠系稀土元素含量明显低于石炭系和二叠系,石炭系-三叠系轻、重稀土元素分馏程度依次减弱,La/Th、La/Y比值依次增大,Th/U比值减小,来自再旋回的物质依次增多。综合碎屑组分、常量元素、稀土元素及微量元素特征的判别,天山南缘石炭系物源区构造背景为既有指示大陆岛弧、活动大陆边缘的证据,也有指示为被动大陆边缘,二叠系物源区示为大陆岛弧,三叠系物源区示为大陆岛弧和含有古老沉积岩的陆块。对比石炭系、二叠系及三叠系物源区的大地构造属性,石炭系物源区示有多种属性,而二叠系、三叠系则相对较为单一,这可能与中天山-伊犁地块和塔里木陆块的碰撞有关。

英文摘要:

Our research focuses on the composition and provenance tectonic evolution of the Carboniferous-Triassic clastic rocks in the southern margin of the Tianshan. Analysis of petrology and geochemistry of detrital rocks shows that the Carboniferous and Triassic sandstones have a low compositional, textural maturity and high matrix content. The unstable component of sandstones increases from the Carboniferous to the Triassic. The Carboniferous and Permian have a similar characteristic of REE abundances, which is obviously higher than that in the Triassic. The fractionation degree of light and heavy rare earth elements and the ratios of La/Th and La/Y descend from the Carboniferous to the Triassic and the Th/U ratio increases, which implicate the increase of recycled sediments. According to the distinction of detrital composition, major elements, rare earth elements and trace elements, the provenance tectonic settings of the Carboniferous were continental island arcs, active continental margin and passive continental margin, and the Permian's was continental island arcs and the provenance of the Triassic was more similar to continental island arcs and ancient sedimentary geological bodies. The carboniferous has a more complex provenance compared with Permian and Triassic provenances, which may be related to the collision between the Central Tianshan-Yili block and the Tarim block.

关键词: [石炭系](#) [三叠系](#) [碎屑组分](#) [地球化学](#) [物源分析](#) [天山南缘](#)

投稿时间: 2011-11-12 最后修改时间: 2012-02-28

[HTML](#) [查看全文](#) [查看/发表评论](#) [下载PDF阅读器](#)

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

[linezing.com](#)