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澜沧江南段临沧花岗岩的锆石U-Pb年龄及构造意义**作者 单位**王舫 [中国地质科学院地质研究所, 大陆构造与动力学国家重点实验室, 北京 100037](#)刘福来 [中国地质科学院地质研究所, 大陆构造与动力学国家重点实验室, 北京 100037](#)刘平华 [中国地质科学院地质研究所, 大陆构造与动力学国家重点实验室, 北京 100037](#)施建荣 [中国地质科学院地质研究所, 大陆构造与动力学国家重点实验室, 北京 100037](#)蔡佳 [中国地质科学院地质研究所, 大陆构造与动力学国家重点实验室, 北京 100037](#)**基金项目:** 本文受国家自然科学基金项目(41302039、41372069)、中国地质调查局工作项目(12120114023001、1212011121276)、创新研究群体科学基金项目(41221061)和中国地质科学院地质研究所基本科研业务费(J1328)联合资助。**摘要:**

临沧花岗岩是滇西地区出露面积最大的复式岩基,它是特提斯构造域的重要组成部分,是研究古特提斯俯冲-碰撞的重要窗口。本文通过对澜沧江南段澜沧-景洪地区广泛出露的临沧花岗岩的岩石学、地球化学以及锆石年代学综合分析,系统阐述该区花岗岩的原岩性质以及其形成的构造背景。临沧花岗岩主要岩石类型为黑云母二长花岗岩和花岗闪长岩。锆石LA-ICP-MS U-Pb年代学结果表明,该区临沧花岗岩侵位时代为217~233Ma。前人在澜沧江北段花岗岩也获得相似的侵位年龄,表明临沧花岗岩的南段与北段在形成时代上具有一致性。继承锆石U-Pb年龄主要峰期集中在2494Ma、1832Ma、1382Ma、959Ma、774Ma、482Ma,指示临沧花岗岩具丰富的物质来源。全岩主微量元素分析结果显示,临沧花岗岩的 $\text{Na}_2\text{O}/\text{K}_2\text{O}$ 比值低,铝饱和指数(A/NCK值)大于1,属高钾钙碱性系列,过铝质花岗岩。轻重稀土分异明显,轻稀土相对富集,具有明显的铕负异常($\text{Eu}/\text{Eu}^*=0.39\sim 0.63$);相容元素Cr和Ni含量较低,富集大离子亲石元素Rb和Ba,亏损高场强元素Nb-Ta和Zr-Hf。地球化学特征显示,临沧花岗岩来源于地壳沉积物的部分熔融,属S型花岗岩,形成于古特提斯洋闭合后的构造伸展阶段。

英文摘要:

Lincang granite is the largest complex batholith located in the western Yunnan, and is an important component of Paleo-Tethys. They are unique research subjects for understanding subduction and collision of Paleo-Tethys. In this paper, we present geochronological results and whole-rock geochemical data of granites widely exposed in the Lancang-Jinghong area southern Lancang River, to discuss the origin of the Lincang granite and its tectonic signification. The Lincang granites are mainly dominated by biotite adamellite and granodiorite. The concordant age of 217~233Ma, determined by LA-ICP-MS zircon U-Pb dating suggests the Mid-Late Triassic magmatism. The ages of granites in the northern Lancang River obtained from previous studies have a good consistency with that in south. Moreover, the inherited zircon yield major age clusters at 2494Ma, 1832Ma, 1382Ma, 959Ma, 774Ma and 482Ma, indicates the multiple province of Lincang granites. The Lincang granites are peraluminous (A/NCK=1.03~1.27), and belong to high-K calc-alkaline series, with low $\text{Na}_2\text{O}/\text{K}_2\text{O}$ ratio. Their strongly fractionated REE pattern, with apparently negative Eu anomalies ($\text{Eu}/\text{Eu}^*=0.39\sim 0.63$), as well as low Cr and Ni contents, high Rb and Ba contents, and depleted Nb-Ta and Zr-Hf, suggest that characteristic of S-type granite with the magma originated from anatexis of crustal source. Therefore, in combination with geochemical data and geochronological results demonstrate that post-collision extension and partial melting of crust after the closure of Paleo-Tethys could be responsible for the magmatism.

关键词: [锆石U-Pb定年](#) [地球化学](#) [临沧花岗岩](#) [澜沧江南段](#) [古特提斯洋](#)**投稿时间:** 2013-11-30 **修订日期:** 2014-02-21[HTML](#) [查看全文](#) [查看/发表评论](#) [下载PDF阅读器](#)

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