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大别造山带和扬子陆块北缘中生代玄武岩铅同位素组成及构造意义 [点此下载全文](#)

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摘要:

大别造山带在地球化学分区上属于扬子大板块还是华北大板块一直存在争议。近年来, 一些学者根据其显生宙矿石铅和花岗岩长石铅(揭示地壳铅)具有低铅同位素成分特征, 将大别造山带整体划归华北大板块。本文对大别造山带南部(黄陂、新洲、大悟地区)、腹地(麻城地区)和扬子陆块北缘(黄石地区)晚中生代碱性玄武岩铅同位素组成(揭示地幔铅)研究表明, 大别造山带具有高放射性成因铅同位素特征, 与扬子铅同位素省中南扬子亚省基本一致。扬子陆块北缘(黄石地区)晚中生代碱性玄武岩铅同位素组成与扬子铅同位素省中北扬子亚省基本一致。铅同位素组成特征和Th-U-Pb体系变异趋势均表明: (1)大别造山带晚中生代地幔属于扬子地幔, 与华北地幔存在明显区别; (2)大别造山带壳、幔铅同位素成分上存在明显的非耦合特征, 反映大别造山带壳幔演化历史的复杂性。

关键词: [铅同位素](#) [玄武岩](#) [地球化学分区](#) [壳幔非耦合性](#) [扬子陆块](#) [中生代](#) [中国](#) [大别造山带](#)

Pb Isotopes of Late Cretaceous Basalts in Dabie Orogenic Belt, Central China [Download Fulltext](#)

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Abstract:

It has long been debated that the Dabie orogenic belt belongs to the North China or Yangtze cratons. In re-cent years, the eastern China has been suggested, based on the Pb isotopic compositions of Phanerozoic ore and Mesozoic granitoid K-feldspar (revealing the crust Pb) combined with Meso-Cenozoic basalts (revealing the mantle Pb), being divided into North China and Yangtze Pb isotopic provinces, where the crust and mantle of the Yangtze craton are characterized by more radiogenic Pb. In this sense, the previous researchers suggested that the EW-treading Dabie orogenic belt with less radiogenic Pb in the crust was part of North China craton. In this paper, however, the Late Cretaceous basalts in the central and southern parts of Dabie orogenic belt are characterized by some more radiogenic Pb ( $^{206}\text{Pb}/^{204}\text{Pb} = 17.936 - 18.349$ ,  $^{207}\text{Pb}/^{204}\text{Pb} = 15.500 - 15.688$ ,  $^{208}\text{Pb}/^{204}\text{Pb} = 38.399 - 38.775$ ) and a unique U-Th-Pb trace element system similar to those of Yangtze craton, showing that the Mesozoic mantle is Yangtze-typed. In addition, the decoupled Pb isotopic compositions between crust and mantle were considerably derived from their rheological inhomogeneity, implying the complicated evolutions of the Dabie orogenic belt.

Keywords: [Pb isotope](#) [basalt](#) [geochemical subdivision](#) [decoupled crust-mantle evolution](#) [Yangtze era-ton](#) [Dabie orogenic belt](#) [central China](#)

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