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山东济阳拗陷第三纪玄武岩的铅同位素研究 [点此下载全文](#)

[沈渭洲](#) [赵连泽](#)

南京大学地球科学系, 南京大学地球科学系, 南京大学地球科学系, 南京大学地球科学系, 南京大学地球科学系 南京大学内生金属矿床成矿机制研究国家重点实验室, 210093, 南京大学内生金属矿床成矿机制研究国家重点实验室, 210093, 南京大学内生金属矿床成矿机制研究国家重点实验室, 210093, 南京大学内生金属矿床成矿机制研究国家重点实验室, 210093

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摘要:

山东济阳拗陷第三纪玄武岩的Pb同位素组成变化明显: $^{206}\text{Pb}/^{204}\text{Pb}$ 值为16.864-18.361, $^{207}\text{Pb}/^{204}\text{Pb}$ 值为15.268-15.599, $^{208}\text{Pb}/^{204}\text{Pb}$ 值为36.770-39.118。在Pb-Pb和Pb-Sr图上, 所有数据点形成良好的线性关系, 而且都分布于DMM、EM I 和EM II 3个地幔端员组分之间。这些特征表明, 同位素组成的明显变化应主要归因于玄武岩浆形成幔源区中不同端员组分之间的混合作用, 地壳混染作用影响不明显。

关键词: [第三纪](#) [玄武岩](#) [Pb同位素](#) [山东](#) [济阳拗陷](#) [铅同位素](#)

Study on the Lead Isotopic Compositions of Tertiary Basalts in the Jiyang Depressional Basin, Shandong Province [Download Fulltext](#)

SHEN Weizhou, ZHAO Lianze, ZHAO Ming, KONG Qingyou, CAI Yuanfeng Department of Earth Science, State Key Laboratory of Mineral Deposits Research, Nanjing University, 210093

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Abstract:

Lead isotopic compositions of 29 Tertiary basalts in the Jiyang depressional basin are reported in this paper. It is indicated that lead isotopic compositions of these basalts vary obviously. Their $^{206}\text{Pb}/^{204}\text{Pb}$ ratios are 16.864-18.361, $^{207}\text{Pb}/^{204}\text{Pb}$, 15.268-15.599 and $^{208}\text{Pb}/^{204}\text{Pb}$, 36.770-39.118. On the $^{207}\text{Pb}/^{204}\text{Pb}$ vs $^{206}\text{Pb}/^{204}\text{Pb}$ diagram, the Tertiary basalts are plotted above NHRL line and their A8/4 values are all larger than 60, suggesting the occurrence of Dupal anomaly in their mantle source. On the Pb-Pb and Pb-Sr correlation diagrams, all data points have a good linear relation indicating the binary mixing characteristics and are all located between the endmember components of DMM, EM I and EM II. Because the positive Nb anomaly and higher MgO contents and Mg# number values of these basalts, it is not important that the crustal contamination occurred during the ascending process of basaltic magma. Therefore, we conclude that the obvious variations of Pb isotopic composition are mainly attributed to the mixing process of different degree between the different endmember components during the formation of basaltic magma.

Keywords: [Tertiary basalt](#) [lead isotope](#) [Jiyang depressional basin](#) [Shandong](#)

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