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嘉陵江三大水系边滩沉积物磁性特征及其物源指示意义

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Magnetic properties of sediments from the major tributaries of the Jialing River and their implications for provenance identification

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摘要 通过2009年夏季采集的嘉陵江三大水系边滩沉积物样品的磁性测量, 结合粒度分析, 探讨了三江沉积物磁学特征的差异. 结果表明, 三大水系沉积物中磁性矿物除磁铁矿外, 还含有丰富的赤铁矿, 反映了四川盆地中生代紫色砂页岩作为嘉陵江水系泥沙来源的特点. 嘉陵江干流由于上游黄土的输入, 其磁铁矿对样品磁性特征的贡献最为显著. 磁性参数 χ , SIRM和 S_{300} 的组合, 可将三江沉积物有效区分.

关键词: 磁性特征 粒度 物源 嘉陵江 磁性特征 粒度 物源 嘉陵江

Abstract: Magnetic measurements and particle size analysis were carried out on samples collected from the tributaries in summer of 2009, with the purpose to recognize the difference in magnetic properties among them. The results indicate that the magnetic properties of the sediments are dominated by both magnetite and hematite, which reflects the fluvial input from Mesozoic red beds widely distributed in Sichuan Basin. Sediments from the main stream of Jialing River are characterized by higher proportions of magnetite due to loess input in the upper reach. A combination of magnetic parameters of χ , SIRM and S_{300} can discriminate the sediments from the three tributaries very well.

Key words: particle size sediment provenance Jialing River magnetic properties particle size sediment provenance Jialing River

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