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研究报告

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# 三峡库区出露期消落带沉积物磷分布特征

# Phosphorus distribution characteristics in sediments of Three Gorges Reservoir Area during the exposed period

关键词：磷 三峡库区 沉积物 消落带

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摘要：为了揭示经历完整反季节干湿交替周期消落带沉积物磷的源汇转化趋势,分析了三峡库区出露期消落带沉积物中磷酸盐的分布特征及含量变化.结果表明,首次经历完整反季节干湿交替的消落带宏观上表现出沉积物总磷(TP)累积现象,但覆水沉积物TP>落干沉积物TP,表明夏季水库开闸放水排沙,且消落带夏季出露期降雨资源丰富,有利于出露消落带表层沉积物被冲刷排除.有机磷(Or-P)含量升高是导致首次经历完整反季节干湿交替的消落带沉积物总磷积累的主要原因.消落带反季节干湿交替有利于沉积物中活性较高的活性磷(Ac-P)、Or-P的累积,有利于相对稳定的闭蓄态磷(O-P)、钙磷(Ca-P)排出.

**Abstract**: In order to reveal the source-sink alternation of phosphorous based on the entire anti-seasonal dry-wet cycle in the fluctuating zone, we analyzed the distribution characteristics and content changes of phosphate in sediments of Three Gorges Reservoir Area (TGRA) during the exposed period. The result indicated that macroscopically, total phosphorous (TP) accumulated in sediments in the fluctuating zone which experienced the entire anti-seasonal dry-wet cycle for the first time. However, the TP in submerged sediment was bigger than TP in exposed sediment. It indicated the upper layer of exposed sediments was eroded because of abundant rainfall and water and sand discharge in summer. Anti-seasonal wet-dry alternation is helpful to discharging relatively stable occlude phosphorus (O-P) and calcium bounded phosphorus (Ca-P) and promotes the accumulation of active phosphorus (Ac-P) and organic phosphorus (Or-P) in sediments.

**Key words**: phosphorus Three Gorges Reservoir sediment fluctuating zone



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