

## The sedimentary environment and genesis analysis of the Xiashu Formation in the Chizhou area, Anhui Province

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**Abstract:** Coupled with the regional geological characteristics of the Quaternary, sedimentary environment and genesis of the Xiashu Formation in Chizhou, Anhui Province were investigated from the aspects of paleoclimate and lithofacies paleogeography using magnetic susceptibility, clay mineral testing and particle size analysis. The magnetic susceptibility curve of the Xiashu Formation is characterized by cycle fluctuation properties of peak and valley. Clay mineral is dominated by illite, with individual layers dominated by montmorillonite, kaolinite and chlorite. The particulates occur mainly as silty sand, with several layers consisting of silty sand and medium-grained sand. The deposition of the Xiashu Formation was frequently influenced by the airflows fluctuations of cold-dry to warm-wet, generally characterized by aeolian deposit in the cold-dry climate. The paleogeographic locations also resulted in alluvial deposits of the Yangtze River system in some areas along the Yangtze River under the conditions of the warm humid climates.

**Key words:** genesis investigation; sedimentary environment; Xiashu Formation; Chizhou area; Anhui Province

## 助力提升台风暴雨影响区重大地质灾害识别精度

2019—2021 年,中国地质调查局南京地质调查中心承担了中国地质调查局部署的“浙江丽水地区灾害地质调查”项目。重大地质灾害隐蔽性强,危害严重,具有灾害链特征。因此,2019 年,“浙江丽水地区灾害地质调查”项目组采用地面调查、遥感调查、INSAR、地质勘查等技术手段探索了台风暴雨条件下重大地质灾害的早期识别机制,提升了重大地质灾害隐患的识别精度,对支撑台风暴雨影响区重大地质灾害防灾减灾具有重要意义。

重大滑坡、沟谷岸坡滑坡—堰塞湖、暴雨型泥石流是东南沿海台风暴雨影响区三类重大的地质灾害类型。“浙江丽水地区灾害地质调查”项目组以此为目标主体,明确提出了该区花岗岩和凝灰岩是重大地质灾害的成灾主体,次级断裂是重大地质灾害的主控因素。搭建了“T”型、“U”型和“叠瓦”型三种组合断裂控制滑坡的成灾框架和成灾机理,分类、分级、定量落实了重大地质灾害的早期识别标志,圈定了目标靶区,提出了工程治理及监测等综合治理方法。此外,项目组还探索了 INSAR 在东南沿海高植被覆盖区地质灾害早期识别中的应用,形成了“空-天-地一体化”的高新技术与传统技术相融合的重大地质灾害早期识别技术方法。

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