

## 全新世古洪水事件光释光测年研究——以渭河下游临潼段为例

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引用本文: 王恒松,黄春长,周亚利,庞奖励,查小春,顾洪亮.2012.全新世古洪水事件光释光测年研究——以渭河下游临潼段为例[J].地球学报,33(2):227-235.

DOI: 10.3975/cagsb.2012.02.11

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基金项目:国家自然科学基金重点项目(编号: 41030637); 中央高校基本科研业务费专项基金(编号: GK200901007; GK200902020)

中文摘要:通过对渭河下游河谷进行深入的考察,在临潼段发现全新世黄土-古土壤层里夹有古洪水滞流沉积层。在剖面系统采样并进行磁化率和粒度成分分析,从沉积学角度证明该地层记录了全新世以来古洪水事件的信息。同时,在剖面采集OSL测年样品,应用单片再生剂量法(SAR)进行红外后蓝光(Post-IR OSL)释光测量,获得了7个OSL绝对年龄值,建立了全新世剖面年代深度关系曲线,确定渭河在3200~3000 a B.P.之间发生特大洪水事件。综合地层学对比以及剖面磁化率和粒度等气候替代性指标分析,揭示了全新世中期向晚期转折过渡时期,气候向干旱化转折,气候不稳定,频繁波动,降水变率大,是造成渭河流域特大洪水事件发生的主要原因。

中文关键词:OSL测年 古洪水事件 全新世 渭河

## OSL Dating of the Holocene Paleoflood Events: A Case Study of the Lintong Segment in the Lower Weihe River Valley

**Abstract:**Field investigation was carried out in the lower Weihe River valley and, as a result, a Holocene loess-soil profile interbedded with flood slackwater deposits (SWD) was found in Lintong segment. The analytical results of grain-size distribution and magnetic susceptibility indicate that this profile has recorded the information of palaeoflood events that occurred during the Holocene. OSL dating of the samples from the profiles using the post-IR technique with the SAR protocol shows a linear relationship between the age and the depth. The extraordinary palaeofloods on the Weihe River were therefore dated at 3200-3000 a B.P. In combination with the stratigraphic correlation and climate proxy of grain-size distribution and magnetic susceptibility, the authors hold that extraordinary palaeofloods occurred just at the turning point from the middle Holocene climatic optimum to late Holocene dry conditions at about 3100 a B.P. The palaeofloods occurred because of the frequent climatic variation and the unstable atmospheric system in relation to the global climatic change. The catastrophic climate has resulted in both the extreme aridity and great palaeofloods.


**keywords:**OSL dating palaeoflood Holocene Weihe River

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