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长江中游砂山沉积物磁组构特征及其指示的古风场

张玉芬¹, 李长安^{2, 3}, 陈亮¹, 康春国³, 胡思辉³, 霍炬³, 严玲琴¹, 程旭¹

- 1 中国地质大学地球物理与空间信息学院, 武汉 430074
- 2 中国地质大学生物地质与环境地质教育部重点实验室, 武汉 430074
- 3 中国地质大学地球科学学院, 武汉 430074

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摘要 本文通过对新发现的江西九江新港砂山剖面沉积物磁化率各向异性测量和磁化率椭球体主轴的统计分析, 揭示了该风成砂剖面磁组构参数在不同层位的变化特征, 获得了古风向特征及其演变规律。(1) 整个时期内该区的主导风向为NW-SE和NNW-SSE向, 但在不同时期风向和风力强度又有所不同, 变化最为剧烈的时期是砂2层, 风向发生了根本性的改变, 由原来的NW-SE为主, 变为NE-SW向为主, 且该阶段沉积环境相对比较稳定;(2) 砂2、砂5、砂6层具有较大 P 、 F 、 L 和较小的 q 值, 说明在其形成时气候最为寒冷, 冬季风的风力最强、风速比较稳定, 这与野外观察到的在这几层中大型板状斜层理发育, 砂层粒度较粗, 黏土含量较少的结果一致;(3) 晚更新世末期长江中游的风成沙丘广泛发育, 表明该时段是长江中下游地区气候最干冷、风力作用最强的时期, 有着与北方沙漠—黄土区相类似的气候环境;(4) 研究表明, AMS主轴的等面积赤平投影法和玫瑰花图, 可以用来分析古风向的变化规律, 是一种简易有效的方法。

关键词 [长江中游](#) [新港风成砂剖面](#) [磁组构特征](#) [古风向](#)

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Magnetic fabric characters of sand-dune sediments and its paleowind field in the middle reaches of Yangtze River

ZHANG Yu-Fen¹, LI Chang-An^{2, 3}, CHEN Liang¹, KANG Chun-Guo³, HU Si-Hui³, HUO Ju³, YAN Ling-Qin¹, CHENG Xu¹

1 Institute of Geophysics and Geomatics, China University of Geosciences, Wuhan 430074, China

2 Key Laboratory and Environmental Geology of Ministry of Education (China University of Geosciences), Wuhan 430074, China

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Abstract Through the measurement of the susceptibility anisotropy and the statistical analysis of the susceptibility ellipsoid's major axis of the sand dune sediments recently found in Jiujiang, Xingang in Jiangxi Province, this papers uses the variation features of the magnetic fabric parameters in the different strata to obtain the patterns of paleowind direction and the rules governing its evolution. (1) During the whole period the dominant wind direction is NW-SE and NNW-SSE with some minor internal changes in wind direction and intensity. The most important change occurs in the second sand stratum when the wind direction shifted to NE-SW. That shows a relatively stable sedimentary environment. (2) In the second, fifth and sixth sand strata the values of P , F , and L are high, and the value of q is low. That corresponds to the coldest climate in the series. The intensity of the winter wind is the highest and the wind velocity is stable, corresponding to the development of large scale tabular and oblique bedding in these strata with coarser grain sizes and lower clay content. (3) During the Late Pleistocene, the extensive occurrence of aeolian sand dunes in the middle reaches of the Yangtze River correspond to the coldest and most dry climate, and also to the strongest wind energy, similar to that of the northern deserts and loess plateau regions. (4) This paper demonstrates that the hemispherical projection and the rose chart of the AMS major axis are easy and effective methods to analyze the variation patterns of the paleowind direction.

Key words [Middle Reaches of the Yangtze River](#); [Aeolian sand profile in Xingang](#); [Magnetic fabric characteristics](#); [Paleowind direction](#)

通讯作者:

张玉芬 zhyfcug@163.com

作者个人主页: 张玉芬¹, 李长安^{2, 3}, 陈亮¹, 康春国³, 胡思辉³, 霍炬³, 严玲琴¹, 程旭¹

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