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南海北部陆坡ODP 1144站位第四纪硅藻及其古环境演变 [点此下载全文](#)

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摘要:

中国南海北部陆坡ODP 1144站位硅藻植物群的研究, 建立了西太平洋边缘海一个新的中更新世晚期以来的硅藻生物地层图式, 根据硅藻化石中具有指示意义的硅藻种的分布和生态变化(暖水种和冷水种), 划分了8个硅藻组合带, 其硅藻组合带分别在不同的海平面环境下形成的, 根据ODP1144站位氧同位素(OIS)测定结果, 8个硅藻组合带与OIS 1—8期相对应。1、3、5、7硅藻组合带相当于OIS1、3、5、7期, 间冰期是以热带和亚热带硅藻占优势, 其中冷期出现大量的沿岸硅藻为特征, 反映高海平面温暖的气候条件; 2、4、6、8硅藻组合带相当于OIS2、4、6、8期, 冰期是以亚热带, 热带和出现较多冷水硅藻为特征, 反映低海平面较冷气候条件, 硅藻丰度值的变化与冰期和间冰期有关, 可以证实间冰期时期高的海平面和较低的生物生产力以及冰期时低的海平面和高的生物生产力, 而生物生产力的变化又与沉积时期沿岸流或上升流的强弱及水团活动有密切关系, 进而揭示该区古海洋环境的演化与季风强弱之间的内在关系。

关键词: [古环境](#) [第四纪](#) [硅藻](#) [丰度值](#) [上升流](#) [南海](#) [生态变化](#) [古海洋环境](#) [冰期](#) [间冰期](#)

Quaternary Diatoms from the South China Sea, Leg 184, Site 1144 and Their Palaeoenvironmental Evolution [Download Fulltext](#)

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Abstract:

This paper presents the late Quaternary diatoms record of the Ocean Drilling Program (ODP) Leg 184, Site 1144 in the South China Sea. The water depth is 2037 m, and sediment thickness is equal to 500 m, a nearly continuous Pleistocene to Holocene sequence is recovered with the cores. The Site 1144 core samples used in this study yield abundant well preserved diatoms from the surface to 183.62 m below the sea floor. Based on the distribution of the zonal diatom species and on changes in the palaeoecological structure of the diatom assemblages (e. g., warm- vs. cold-water assemblages), eight diatom assemblages are defined from this section, the eight diatom assemblages coincide with the oxygen isotope stages (OIS) 1-8., the diatom assemblage 1, 3, 5 and 7 coincide with the interglacial time (oxygen isotope stage 1, 3, 5, 7), the diatom assemblages 2, 4, 6 and 8 coincide with the glacial time (oxygen isotope stages 2, 4, 6, 8). Their abundance and preservation are related, with high abundance values accompanied by good preservation states and low abundance by poor preservation. On the whole, the cycles are well in phase, with high sea level (interglacial) related to high diatom abundance, and low sea level (glacial) to high abundance. Low sea-surface temperature and high bioproductivity is a result of intensified trade wind strength as indicated by the neritic/pelagic diatom ratio. The neritic/pelagic diatom is important as it helps us better understand of the relationship between palaeoceanographic evolution and trade wind strength in the region.

Keywords: [Quaternary](#) [diatom](#) [abundance](#) [upwelling](#)

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