

## **Late Cenozoic history of sea level changes documented from high-resolution seismic data on the Northern Sunda Shelf, South China Sea**

**GUANGFA ZHONG<sup>1</sup>, JIANHUA GENG<sup>1</sup>, ZUYI ZHOU<sup>1</sup>, HOW KIN WONG<sup>2</sup> AND LIAOLIANG WANG<sup>3</sup>**

<sup>1</sup>Key Laboratory of Marine Geology of China Ministry of Education, Tongji University  
Shanghai 200092, China

<sup>2</sup>Institute of Biogeochemistry and Marine Chemistry, Hamburg University  
20146 Hamburg, Germany

<sup>3</sup>Guangzhou Marine Geological Survey, Ministry of National Land and Resources  
Guangzhou 510760, China

In the paper, a quantitative model is presented to estimate the magnitudes of eustatic sea level rises and falls by seismic data in an effort to consider the variables such as erosion, subsidence, compaction, and paleo-water depth, etc. As an application of the model, a eustatic curve of sea level changes since Pliocene is deduced from high-resolution air gun seismic lines acquired by German Sonne 115 Cruise in 1997. On the curve, about 36 cycles of sea level changes can be recognized with

periods ranging from 0.08 Ma to 0.29 Ma, which are fallen into 4th order of sea level cycles. The curve is compared with the reprocessed deep-sea stable oxygen isotope data from benthic foraminifera on ODP sites 1,148 and 846 by resampling and filtering. Both of them matched well, which suggests that the 4th order of eustatic sea level changes during the last 5.33 Ma was probably controlled by changes in the sizes of the ice caps.