

**CENOZOIC BASEMENT STRUCTURE OF THE SOUTH CHINA SEA AND ADJACENT AREAS BY
MODELING AND INTERPRETING GRAVITY DATA**

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Поступила в редакцию 22 августа 2012 г.

The South China Sea and adjacent areas is a large region with diversely complicated geological conditions. In spite of investigations carried out over the past many years, the marine geological structure in many places has remained poorly understood because of the deficient data, a thick seawater layer as well as of the sensitive areas among the countries in the region.

In this paper, the authors study and apply a model-based methodology of the modeling and interpretation of the newest gravity data and others, which are 3D modeling, frequency filtering, horizontal gravity gradient and maximum horizontal gravity gradient, in order to determine clearly the basement structure. The basement features such as the main faults systems, uplift-depression zones and seafloor spreading axis, oceanic boundary in the region have been defined.

The achieved results are checked by the seismic data available for the region. From the studied results, the authors have brought out some initial remarks on the structure and form of the basement in the South China Sea and adjacent areas.

Key words: Basement structure; South China Sea; marine gravity data; basement fault; seafloor spreading axis; oceanic crust.