

Carbonate reservoir features and its main control factors in South Slope of Northern Tarim, China

RUIJU WANG, ZHENG HONGJU, JIANG HUA, CHUNMING ZHANG, SUYUN HU, ZECHENG WANG

(PetroChina Research Institute of Petroleum Exploration & Development, Beijing 100083, China)

Good exploration prospects have been shown in carbonate of lower Ordovician, which's depth is larger than 6500m, in south slope of Northern Tarim, but carbonate reservoir features and its attributions have not been completely known. In this research, cores, glass slides, logs, 3-d high resolution seismic, and so on, are used. And researching methods such as tectonic evolution analyzing, reservoir feature depicture, and so on, are applied. Types, periods, distribution and overlapping method of karst were studying in this area. It was recognized that different karsts played the various parts in different areas. North area of Tumuxiuke pinch-out developed potential karst, while most areas on the south side developed alonging-karst. It was particular that Yingmai area developed vertical karst. Complexity of karst reservoir was decided by attribution of high-energy facies and history of tectonic evolution. Research on superimposing pattern of karst and different features was going to help the exploration in the research area.

Geochemical characteristics of sediment of Pearl river estuary and its palaeoenvironmental evolution

WANG SHANSHAN¹ * CAO ZHIMIN²
AND LAN DONGZHAO^{2,3}

¹ Zhejiang Institute of Hydraulics & Estuary, Hangzhou, 310020, China (correspondence: shanshwang@gmail.com)

² College of Marine Geosciences, Ocean University of China, Qingdao, 266003, China

³ Third Institute of Oceanography, SOA, Xiamen 361005, China

Data and method

The concentration of metal elements (Co, Cu, Zn, Ni, Cr, Zr, Sr, Ba), total content of organic matter and average grain size were determined from 16 sediment samples in different depth of 3.5m core in Pearl River estuary of China. Three important factors were identified from 160 data, using principal component analysis method.

Discussion of Results

The variance contribution (Tab1) shown the effect for chemical composition of sediment, and after further analysis, We found that, the three factors represented catchment erosion (F1), biogenic deposit (F2) and marine dominated condition (F3) (Tab1) respectively. The factor score curves (Fig1) represented the changes of humidity and temperature and the hydrodynamics in different depth (times).

| Factors | Variables and factor loading | Variance contribution % |
|---------|--|-------------------------|
| F1 | Co 0.873, Cu 0.906, Ni 0.925, Zn 0.807, Cr 0.628, Average grain size 0.710 | 42.06 |
| F2 | Sr 0.885, Ba 0.949 | 21.95 |
| F3 | Zr 0.748, TOC* -0.937 | 21.58 |

*TOC: total organic carbon

Table 1: Result of factor analysis

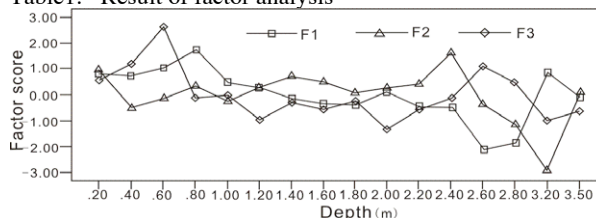


Figure 1. Lines of factor scores in different depth

The study provided an effective approach for palaeoenvironment reconstruction of Pearl river delta. It revealed that the basic palaeoclimate succession in the region of Pearl river delta is cool-humid, cool-dry, warm-dry, warm-dry, warm-humid and warm-dry successively.

(This work was funded by National Science Foundation of China (41006052))