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渤海湾地区中生代地层剥蚀量及中、新生代构造演化研究

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纪友亮 胡光明 黄建军 吴智平

同济大学海洋与地球科学学院，同济大学海洋与地球科学学院，同济大学海洋与地球科学学院，中国石油大学(华东)
上海，200092，上海，200092，上海，200092，山东东营，257061

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摘要：

本文首先利用地震层速度法、镜质组反射率法、声波时差法、地质外推法、磷灰石裂变径迹法等确定渤海湾盆地区中生界三叠系、侏罗系、白垩系的剥蚀量,恢复了其原始地层厚度,分析了中生代不同时期地层的分布状态,盆地性质和展部特点。认为渤海湾盆地区,三叠系沉积时期为大型内陆盆地,末期抬升遭受剥蚀。侏罗系和白垩系沉积时期为北西向展布的扭张型小盆地。进入新生代后,形成了一个受NNE、NE向断层控制的半地堑式复合盆地,叠置于中生代盆地之上。不同时代的地层由于不同的叠合方式形成了中坳新坳、中坳新隆、中隆新坳、中隆新隆4种叠合单元类型,不同类型的叠合单元经历了不同的沉降史,具有不同的石油地质意义。

关键词：磷灰石 裂变径迹长度分布 数值模拟 剥蚀量 渤海湾盆地 叠合单元

Eroded Strata Thickness of Mesozoic and Evolution of Mesozoic and Cenozoic Basins in the Bohai Bay Basin Area

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JI Youliang~ 1),HU Guangming~ 1),HUANG Jianjun~ 1),WU Zhiping~ 2) 1) School of Ocean and Earth Science,Tongji University,Shanghai,200092 2) China University of Petroleum,Dongying,Shandong,257061

Fund Project:

Abstract:

In this article, technique of apatite fission track length, the seismic strata velocity method, R_o method, sound wave time difference method and geologic extrapolation are used to get the eroded strata thickness of Tertiary, Jurassic and Cretaceous in the Bohai Bay basin area. Their original sedimentary thicknesses are restored, and the distribution of original strata, prototype and the distribution of the basin in different times are analyzed. It is considered, in the Tertiary, the basin is a big inner continental depression, and in the Jurassic and Cretaceous, the basin is a group of small inter-mountain depression elongated in the ENE direction. In the Cenozoic, a group of half-graben depression elongated in the NNE direction are developed. Because of the superposition of relic basin of different ages in the area of the Bohai Bay basin, 4 types of superposition units are formed: (1) Mesozoic depression and Cenozoic depression; (2) Mesozoic depression and Cenozoic uplift; (3) Mesozoic uplift and Cenozoic depression; and (4) Mesozoic uplift and Cenozoic uplift. Because of different superposition units experienced different burial and thermal evolution history, they have different petroleum geological importance.

Keywords:apatite fission track length distribution numerical simulation eroded strata thickness Bohai Bay basin superposition unit

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