地球物理学报 » 2014, Vol. 57 » Issue (2) :546-555 doi:10.6038/cjg20140219

引用本文(Citation):
李淑玲, Yaoguo Li, 孟小红, 付立新.黄骅坳陷横向构造转换带与基底三分结构的重磁证据. 地球物理学报, 2014,57(2): 546-555,doi: 10.6038/cjg20140219

LI Shu-Ling, Yaoguo Li, MENG Xiao-Hong, FU Li-Xin.The indication for traversal tectonic transform zones and trichotomous structural basement from gravity and magnetic anomaly in Huanghua depression.Chinese Journal Geophysics,2014,57(2): 546-555,doi: 10.6038/cjg20140219

黄骅坳陷横向构造转换带与基底三分结构的重磁证据

李淑玲[1,2], Yaoguo Li[2], 孟小红[1], 付立新[3]*

1. 地下信息探测技术与仪器教育部重点实验室(中国地质大学, 北京), 北京 100083;
2. Department of Geophysics, Colorado School of Mines, Golden, CO80401, USA;
3. 中国石油大港油田公司, 天津 300280

The indication for traversal tectonic transform zones and trichotomous structural basement from gravity and magnetic anomaly in Huanghua depression

LI Shu-Ling[1,2], Yaoguo Li[2], MENG Xiao-Hong[1], FU Li-Xin[3]*

1. Key Laboratory of Geo-detection, China University of Geosciences (Beijing), Ministry of Education, Beijing 100083, China;
2. Department of Geophysics, Colorado School of Mines, Golden, CO80401, USA;
3. Dagang Oil Field Company, CNPC, Tianjin 300280, China

摘要 参考文献 相关文章

Download: PDF (5615 KB) HTML (1 KB) Export: BibTeX or EndNote (RIS) Supporting Info

摘要 黄骅坳陷盆地结构及构造单元展布受深断裂及盆地基底的控制与影响，利用重磁异常可以较大范围地揭示出控制盆地构造格局的深断裂及基底结构特征.本文综合考虑研究区盆地基底的宏观磁性差异以及存在的剩磁影响，采用对磁化方向依赖性小的磁异常模量数据，研究了黄骅盆地区域横向构造转换带的展布与磁性基底结构.识别出五条NW向与优势构造走向高角度相交的区域横向构造转换带和两条呈“T” 型展布的隐伏深断裂；研究区基底具有三分性结构特征，隐伏深断裂可能为三分基底的拼合线；基底结构差异及区域横向构造转换带共同控制了黄骅盆地“南北分区，东西分带”的宏观构造格局及沉积构造单元的展布.

关键词 黄骅坳陷, 磁异常模量, 横向构造转换带, 基底三分结构

Abstract: The basin structure and distribution of tectonic units in the Huanghua depression are affected and controlled by deep faults and the basement. These features can be revealed on large scales using gravity and magnetic anomalies. However, the magnetic data processing and interpretation are faced with challenges from macroscopic magnetic differences of the basement and remanence effects present in ignores rocks and the basement. To tackle these challenges, and to develop a new methodology for tectonic structure interpretation from magnetic data when the RTP (reduction to the pole) is not applicable, we present a study on gravity and magnetic amplitude data which is only weakly dependent on the direction of magnetization to delineate traversal tectonic transform zones and analyze trichotomous structure of the basement in the Huanghua depression. The results show that five NW—SE trending tectonic transform zones traverse at high angles to dominate geological structures and "T-shaped" intersection of two hidden deep faults may be the suture zone between three types of basements in this area. These characteristics reveal that a basin structure is featured macroscopically by east-west zoning and north-south partitioning, and that the distribution of the sedimentary tectonic units is controlled by the differences of basement properties and regional tectonic transform zones.

Keywords Huanghua depression, Amplitude of magnetic anomaly, Traversal tectonic transform zone, Trichotomous property of basement

Received 2013-11-09;

Fund:国家留学基金、Gravity and Magnetics Research Consortium （GMRC）、国家自然科学基金（41074095）、深部探测技术与实验研究专项（SinoProbe-01-05）、中央高校基本科研业务费专项资金（2652013035）联合资助.

About author: 李淑玲，女，1971年生，博士，副教授，主要从事地球物理重磁方法、地球物理综合处理解释方面的教学与研究工作.E-mail：lisl@cugb.edu.cn

Service
把本文推荐给朋友
加入我的书架
加入引用管理器
Email Alert
RSS
作者相关文章
李淑玲
Yaoguo Li
孟小红
付立新

链接本文:
http://manu16.magtech.com.cn/geophy/CN/10.6038/cjg20140219 或 http://manu16.magtech.com.cn/geophy/CN/Y2014/V57/I2/546
查看全文 下载PDF阅读器