

技术方法

基于Hyperion影像的涩北气田油气信息提取

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摘要:

对柴达木地区涩北气田地质地理环境下的蚀变矿物进行分析, 结合卫星高光谱遥感数据Hyperion的图谱, 对已知气田区与背景区光谱特征进行相关分析, 确定了932.64~1 346.25 nm与2 002.06~2 385.5 nm为油气信息识别的有利波长范围; 利用光谱角制图(SAM)技术提取了涩北气田油气的空间分布信息和台吉乃尔含气构造等远景区, 为高光谱遥感油气勘探提供了有效技术方法与途径。

关键词: 油气 高光谱遥感 光谱特征 信息识别 光谱角 柴达木

THE EXTRACTION OF OIL AND GAS INFORMATION BY USING HYPERION IMAGERY IN THE SEBEI GAS FIELD

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Abstract:

This paper studied the altered minerals under the geological and geographical conditions of the Sebei Gas Field in Qaidam Basin, and analyzed the relationship of the spectral character between the known gas field and the background district in the study area with the help of the illustration of Hyperion Imaginary and the satellite hyperspectral remote sensing data. On such a basis, 932.64~1 346.25 nm and 2 002.06~2 385.5 nm were confirmed as the optimal spectral ranges for distinguishing the information of background and that of target. Then the oil and gas special distribution information was extracted by the SAM (Spectral Angle Mapper) method. As a result, some promising gas fields such as the Tajnar gas-bearing structure were recognized, thus providing an effective method and approach to oil and gas exploration with the satellite hyperspectral remote sensing technology.

Keywords: Oil and gas Hyperspectral remote sensing Spectral character Information identification Spectral angle Qaidam

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