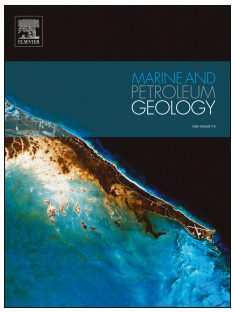
Accepted Manuscript



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PII: S0264-8172(16)30408-1

DOI: 10.1016/j.marpetgeo.2016.11.015

Reference: JMPG 2738

To appear in: *Marine and Petroleum Geology*

Received Date: 17 October 2016

Revised Date: 14 November 2016

Accepted Date: 14 November 2016

Please cite this article as: Wang, X., Pan, D., Application of AVO attribute inversion technology to gas hydrate identification in the Shenhu Area, South China Sea, *Marine and Petroleum Geology* (2016), doi: 10.1016/j.marpetgeo.2016.11.015.

Application of AVO Attribute Inversion Technology to Gas Hydrate Identification in the Shenhu Area, South China Sea

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Abstract: AVO (Amplitude Versus Offset) is a seismic exploration technology applied to recognize lithology and detect oil and gas through analyzing the feature of amplitude variation versus offset. Gas hydrate and free gas can cause obvious AVO anomaly. To find geophysical evidence of gas hydrate and free gas in Shenhu Area, South China Sea, AVO attribute inversion method is applied. By using the method, the multiple seismic attribute profiles and AVO intercept versus gradient (I-G) cross plot are obtained. Bottom-simulating reflector (BSR) is observed beneath the seafloor, and the AVO abnormal responses reveal various seismic indicators of gas hydrate and free gas. The final AVO analysis results indicate the existence of gas hydrate and free gas in the upper and lower layers of BSR in the study area.

Key words: gas hydrate, AVO, attribute inversion, BSR, free gas

1. Introduction

Gas hydrate is a kind of ice-like solid material composed of water

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