

GEOSEA 2018
**15th REGIONAL CONGRESS ON GEOLOGY,
MINERAL AND ENERGY RESOURCES
OF SOUTHEAST ASIA**



16-17 October 2018



ASEAN Geosciences and Earth resources
for sustainable development

PROCEEDINGS
Abstracts



PUBLISHING HOUSE FOR SCIENCE AND TECHNOLOGY

105. Pillayati, Mohamad Nur Heriawan, Lilik Eko Widodo. Drill-Holes Spacing Analysis using Geostatistical Method for Non-Stationary Data of Coal Geometry and Qualities: The Problem and Practical Solution.....	186
106. Renat Shakirov, Le Duc Anh, Mariya Shakirova, Nguyen Hoang, Nadezhda Syrbu, Anatoly Obzhirov. Gashydrates in the East Asian Seas: Experience overview and future applications.....	187
107. Tran Trong Thang, Tran Van Mien, Nguyen Trong Hien, Nguyen Cao Cuong, Vu Hong Dang, Nguyen Tien Quang. Estimation of enhanced geothermal system (EGS) potential in mainland Red River basin, Vietnam.....	189
108. Nguyen Hong Minh. Petroleum Exploration Geophysics - the Pioneer in Industry 4.0 Era!.....	190
109. Tran Trong Thang, Nguyen Trong Hien, Nguyen Cao Cuong, Vu Hong Dang, Nguyen Tien Quang. General assessment for potential of ground source heat pump installation in the Red River Delta, Vietnam.....	195
110. Nguyen Thanh Tung, Pham Dinh Tan, Phan Thien Huong. Application of seismic attribute analysis to study fractured basement.....	196
111. Bui Huy Hoang, Nguyen Van Kieu, Nguyen Quang Tuan, Bui Viet Dung. Preliminary results on the deep water sedimentary facies of the Late Ordovician-Early Silurian deposits on Co To Archipelago, NE Vietnam.....	197
112. Hamada G. M, Joseph V. Laboratory based empirical correlations between sound wave velocity and porosity, permeability under different compaction pressures for sandstone core samples.....	199

HYDROGEOLOGY, WATER RESOURCES – MANAGEMENT

113. Tong Ngoc Thanh, Vu Thanh Tam. Overview of ground water resource in Vietnam.....	204
114. Armin Pechstein, Hoàng Thị Hạnh. Detailed investigations on hydrogeological situation in Ca Mau province, Mekong delta, Vietnam.....	206
115. Ta Thi Thoang, Pham Quy Nhan, Tran Thanh Le. Recent seawater intrusion investigation for unconsolidated Quaternary aquifers in Ninh Thuan plain using chemical - electrical method.....	207

Application of seismic attribute analysis to study fractured basement

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Seismic attribute analysis is supposed to have a great potential to reveal latent geological features and has been implemented extensively in Cuu Long basin to predict the fracture reservoirs of the basement, however, the results so far are not up to expectations. A review of previous studies shows that the low signal to noise ratio (SNR) and the presence of artefacts can cause inaccurate or even misleading interpretations. To improve the effectiveness of seismic attributes in prediction of fracture reservoirs, three approaches to reduce the influence of noise and artefacts are proposed. The simplest way is to focus on the top basement surface instead of the section below it. A selective combination of independent attributes can be used to delineate fault traces and anomalous zones related to rough boundaries on the top basement. To utilize the information inside basement, principal component analysis (PCA) can be employed to separate noise and artefacts from the useful data. Ultimately, the SNR in the basement can be increased from the processing stage with diffraction imaging technique. The processed data can then be analyzed by seismic attributes or overlaid on conventional data to aid the interpretation of subtle faults and fractures.

Keywords: *Seismic attributes, principle component analysis, diffraction Imaging, fractured basement, Cuu Long Basin.*