

EAGE Workshop on Borehole Technologies

Pioneering Sustainable Solutions in
Energy

Hangzhou, China
29-30 October 2024

ISBN: 979-8-3313-1643-3

Printed from e-media with permission by:

Curran Associates, Inc.
57 Morehouse Lane
Red Hook, NY 12571



Some format issues inherent in the e-media version may also appear in this print version.

Copyright© (2024) by the European Association of Geoscientists & Engineers (EAGE)
All rights reserved.

Printed with permission by Curran Associates, Inc. (2025)

For permission requests, please contact by the European Association of Geoscientists & Engineers (EAGE)
at the address below.

European Association of Geoscientists & Engineers (EAGE)
PO Box 59
3990 DB Houten
The Netherlands

Phone: +31 88 995 5055
Fax: +31 30 634 3524

eage@eage.org

Additional copies of this publication are available from:

Curran Associates, Inc.
57 Morehouse Lane
Red Hook, NY 12571 USA
Phone: 845-758-0400
Fax: 845-758-2633
Email: curran@proceedings.com
Web: www.proceedings.com

TABLE OF CONTENTS

SESSION 1: BOREHOLE SEISMIC I

Downhole DAS Data Denoising using a Guided Deep Learning Workflow	1
<i>G. Chen, Y. Liu, Y. Sun, M. Zhang</i>	
Application of DAS VSP in Deep Shale Gas Exploration.....	4
<i>Y. Wang, X. Cheng, Y. Chen, J. Zhao, C. Ding, F. Tan</i>	

SESSION 4: BOREHOLE SEISMIC II

Depth-Varying Frequency Domain VSP Wavefield Deconvolution: Method and Application	7
<i>Y. Chen, J. Zong, Y. Zhang, G. Yu, Y. Wang</i>	
Dual-Source Distributed Acoustic Sensing (DAS) for Seismic While Drilling (SWD).....	12
<i>Y. Li, Y. Zheng, D. Li, L. Huang</i>	
Application of Time-Lapse DAS VSP Reservoir Monitoring Technology.....	15
<i>Y. Wang, P. Wei, J. Huang, Z. Liu, C. Ding, J. Zhao, H. Zhou</i>	

SESSION 5: MICRO-SEISMIC MONITORING

Application of Microseismic and Seismic Integration Technology in Hydraulic Fracturing Test Site	19
<i>F. Heng, Y. Qi, G. Xu, L. Zhou, J. Rong, C. Feng</i>	
Combined Micro Seismic and Seismic to Optimize Fracture Attributes	22
<i>W. Liu, C. Ding, L. Ma, K. Du, H. Fan</i>	
DAS Microseismic Data Denoising using Dual Domain Generative Adversarial Networks with Attention Mechanism	25
<i>J. Shao, Y. Wang, X. Liang</i>	

AM BREAK & POSTER SESSION (DAY 1)

Effects of Sedimentary-Diagenesis Evolution on Petrophysical Properties of Carbonates of Majiagou Formation in Ordos Basin	28
<i>J. Wang, J. Deng</i>	
Shallow Bore-Hole Microseismic Data Processing Based on Machine Learning	31
<i>Z. Sun, X. Yin, Z. Li</i>	
Evaluation of Oil Saturation in Reservoir Rocks Based on the Borehole-Surface Electromagnetic Method	35
<i>Y. Lu, Y. Zhao, Z. He, G. Yu, S. Ge</i>	
Application of Borehole-To-Surface Electromagnetic Method in Evaluating Remaining Oil Distribution in Ultra-Deep Carbonate Reservoirs	38
<i>X. Qu, G. Zhao, X. Liu, J. Liu, Y. He</i>	
Seismic Data Based Fracture Pressure Prediction Method and Application.....	41
<i>H. Hu, L. Zhang, C. Lei, Z. Sun</i>	

Forward Modeling Study on the Characteristics of the Frequency-Domain Response of Borehole-Surface Electromagnetic Method 45
Y. Yunjian, L. Xuejun, Z. Guo, Y. Heng

Cluster-Based Calculation Method of Wellbore Flow Velocity 48
J. Hu, Y. Wang, X. Liang

Author Index