COLLEGE OF PETROLEUM ENGINEERING & GEOSCIENCES

CIPR COLLOQUIUM

Using advanced CSEM for reservoir monitoring & geothermal applications

SPEAKER

Kurt Strack

BIOGRAPHY: Dr. **K.M. Strack** is president of KMS Technologies specializing in integrated seismic/electromagnetic technology for land & marine exploration, appraisal drilling and production monitoring. KMS is pioneering borehole, borehole-to-surface, and marine electromagnetics to link with the 3D seismic Earth model. Kurt also serves as Adjunct Professor in the Earth and Atmospheric Geoscience Department and Electrical Engineering Department at the University of Houston, Mahidol University Bangkok, and at Yangtze University, Wuhan China. He was Chief Scientist for Baker Atlas where he built the Research Department and supported the development of numerous new logging tools. Prior to that Kurt pioneered LOTEM development and advanced borehole geophysics technologies in Germany, Australia and the USA. Kurt received a Ph.D. from the University of Cologne and a M.Sc. from Colorado School of Mines. He has over 35 experience in the geothermal and oil industry and received many international awards for his work.

Kurt has over 200 publications, 1 textbook & authors/co-authors more than 40 patents. He received a Fulbright scholarship and numerous international grants/awards. His interest is integrating geophysics with other disciplines, technology transfer and project development. .

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"Reservoir monitoring is gaining increasing importance for hydrocarbon and geothermal reservoirs to improve recovery factors and understand fluid movement including fluid induced reservoir changes. Similar, it can be applied to monitoring volcanoes' magna movements and aid for volcano eruption prediction.

In order to see variations at percentage level much more detailed attention is required at all data handling stages. During acquisition, more effort is required to obtain long term stable transmitter and receiver site including not only daily monitoring of contact resistance but also controlling them during the acquisition process to better than 1%. Because of the large dynamic range of the signal highly accurate reference level with active adjustment before the transmitted signal is necessary. When processing the data, a feedback loop between filter selection and noise suppression in the reservoir signal band allows you to optimize the filter and to reduce their effect on the anomaly itself. When modeling for a sedimentary environment, anisotropy is the biggest cause for error and misinterpretation. It can be derived before the survey from exiting logs using end members derived from the log based on the interaction of the layers on reservoir scale. We are using real field measurements for feasibility and as potential misinterpretation examples to illustrate the severance of these issues."

DATE
Monday, Oct. 28th, 2019

TIME
Noon – 13:00 PM

LOCATION
Building 76, Room 1226
King Fahd University of Petroleum & Minerals,
Dhahran 31261
Kingdom of Saudi Arabia

CIPR Colloquium is a weekly event of the Center for Integrative Petroleum Research of the College of Petroleum Engineering & Geosciences at KFUPM. It provides KFUPM, Saudi Aramco, and DTV researchers and scientists with the opportunity to get together and discuss upstream technical matters in a collegial relaxed setting. Students are encouraged to attend and engage.