

Monday, January 23, 2017

Westchase Hilton • 9999 Westheimer
Social Hour 5:30–6:30 p.m.
Dinner 6:30–7:30 p.m.

Cost: \$45 Preregistered members; \$50 non-members/walk-ups

To guarantee a seat, pre-register on the HGS website & pre-pay by credit card.

Pre-registration without payment will not be accepted.

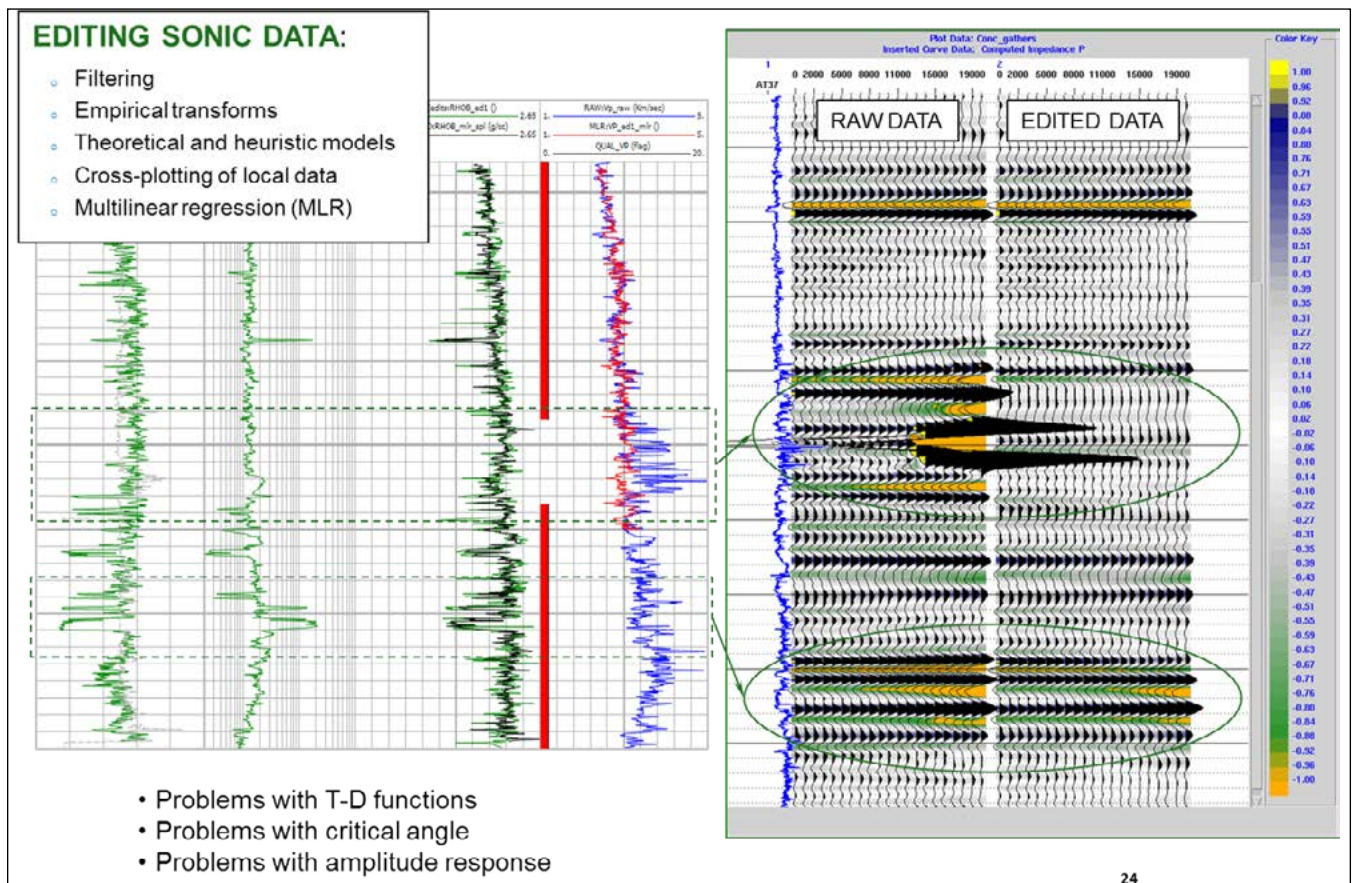
Walk-ups may pay at the door if extra seats are available.

If you are an Active or Associate Member who is unemployed and would like to attend this meeting, please call the HGS office for a discounted registration cost. We are also seeking members to volunteer at the registration desk for this and other events.

Tad Smith

Apache Corporation

Practical Seismic Petrophysics: The Effective Use of Log Data for Seismic Analysis



The conditioning and analysis of log data for quantitative seismic interpretation are often simply categorized as “rock physics.” Unfortunately, rock physics workflows often overlook or oversimplify the proper editing and interpretation of log data, and the result can be unrealistic expectations and interpretations of seismic amplitude responses. The more encompassing phrase “seismic petrophysics” better describes the necessary linkage between petrophysics and rock physics. Seismic petrophysics not only includes rock physics, but also the proper conditioning and interpretation of log data that should occur prior to the application of rock physics and seismic models. This is especially true in conditioning log data for shear-wave velocity estimation,

fluid substitution calculations, and AVO modeling.

This talk will focus on the important role of “seismic petrophysics” in the quest to extract additional information from subtle seismic responses. Topics covered will include various aspects of log editing, petrophysical interpretation (including integration of other data sources- core, fluids, pressures, etc.), and some common pitfalls associated with the “workhorses” of rock physics (invasion corrections, shear velocity estimation, and elements of fluid substitution). It is important to recognize that log data should not simply be recomputed to fit prior expectations as defined by a rock physics model. Instead, rock physics models

should be used as templates, which allow the interpreter to understand the underlying physics of observed log responses and how they are governed by local petrophysical properties. Case studies will be used to reinforce critical concepts. ■

Biographical Sketch

TAD SMITH is Director of Geoscience, E&P Technology, at Apache Corporation. Prior to joining Apache, Tad held a variety of positions as a geologist and petrophysicist at various companies, including Amoco, BP, Newfield Exploration, VeritasDGC, CGGVeritas, and ConocoPhillips. In 1995-1996, he participated in the Amoco Petrophysics Training program, where he developed a keen interest in



petrophysics and seismic rock properties (“seismic petrophysics”). Since then he has been actively engaged in the process of integrating petrophysical data into geophysical work-flows. In 2011, he was the North American Honorary Lecturer for the Society of Exploration Geophysicists, with the topic of his tour being “Seismic Petrophysics”. Tad was President of the Geophysical Society of Houston during the 2013–2014 term. From 2010–2014 he served on the editorial board for *The Leading Edge*, a leading industry publication, and served as the Editorial Board chair during the 2013–2014 term. Tad has a PhD in geology from Texas A&M University (1991), an MSc from Washington State University, and a BA from Ohio Wesleyan University. He is a member of AAPG, SEG, SPWLA, SPE, GSH, and the HGS. When he’s not working on interesting petrophysical problems, he enjoys time with his wife and son, riding bikes, spending time with good friends, and listening to good music.