

From the Editor's desk



Paucity of papers and articles for publication has become a recurring theme of GEOHORIZONS. The influx became acutely low after the conference in January 2008 at Hyderabad. What can an Editor do to overcome such a shortage to keep the periodical going? Drawing an analogy, what does nature do when the rate of sediment supply is exceedingly low compared to the accommodation space? The transgressing sea often reworks the prior sequence boundary and forms a condensed sequence. For the current issue we decided to follow this lesson from sequence stratigraphy.

Accordingly, you will find in this issue three papers which were selected as the “best” papers in the Hyderabad 2008 conference. The paper, “Imaging of Fractures and Faults inside Granite Basement using Controlled Beam Migration” by Don Pham, et. al, will be of interest to the readers for two reasons: It illustrates the use of Controlled Beam Migration for imaging steeply dipping reflections. It also shows the level of sophistication that seismic imaging has attained. Two decades ago, most exploration geophysicists would have felt shy of making any claims of imaging reflections coming from within the basement. That is no longer so today as illustrated by this work.

Merging several 3D seismic data which have been acquired using widely varying acquisition parameters and orientation is a challenging task for a processor. The paper, “3D Seismic Data Merging –A Case History in Indian Context” by Basu et.al. presents the problems encountered and how they were addressed in merging of 3-D data in Tapti in Western offshore, India.

The paper, “Petroleum Systems of Upper Assam Shelf, India” by Pahari et.al. was another award winning paper at Hyderabad 2008. We decided to bring this paper to you again as it provides an excellent condensed summary of the present understanding of the multi-petroleum system in Upper Assam Shelf – an important petroleum habitat in India.

Besides the above three award winning papers, we have two more papers. “Imaging Technique for Minor Faults : A Workflow for running Coherency Attribute” by D. Manna et. al. illustrates the power of Coherency in detecting minor faults with an example from Charali- Changmaigaon area of North Assam shelf of Assam-Arakan Basin of India. The paper has a significant tutorial value.

History of science is replete with examples of missed opportunities and unfinished symphonies. We decided to resurrect one such “lost” study and bring it to you in this issue. In late seventies, two mathematicians of ONGC, Balan and Engineer, analyzed energy partitioning at an interface in the frame-work of Biot’s theory of wave propagation in a two-phase media. The paper was submitted to an international geophysical journal. The referee praised the work but rejected its publication on the grounds of being irrelevant to exploration. That was at a time when the concept of “AVO/AVA” was not even born in seismic industry. One of the authors of the papers, Dr. Balan is no more and the second author, Dr. Engineer retired from active research a long time ago. We decided to publish their work, “Study of conversion and partitioning of wave energies at different kinds of boundaries in fluid-saturated porous media” not only for its historic significance, but also because of its importance today. For, the current practices of analyzing angle dependence of amplitudes of reflection are all based on conventional wave propagation in single phase media which assume that there is no relative motion between the solid and the fluid in a rock. The difference between predictions based on conventional theory and Biot’s theory, which takes into account relative motion between fluid and the solid, can be significant for high frequency end of seismic spectrum especially for gas bearing prospects. For the benefit of a reader not familiar with Biot’s theory, a brief editorial introduction is also provided.

I hope that the next issue of Geohorizons will witness a fresh supply of technical contributions.

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