

Mumbai chapter organizes workshop on EM & Technical talk on Broad band seismic

Workshop on EM

The Mumbai Chapter of SPG India in association with M/s EMGS Asia Pacific, Mumbai organized a workshop on EM on 12th July, 2014 at The Regenza, Hotel Tunga, Vashi, Navi Mumbai. The technical lectures were presented by three speakers from EMGS namely Shri Deepankar Borgohain, Shri Deepak Kumar and Shri Ritesh Mohan Joshi. More than forty SPG members from Navi Mumbai/Mumbai attended the workshop which was coordinated by Shri Sharat Shekhar, SPIC, ONGC. The workshop was also attended by Shri Chaman Singh, Shri P.H. Mane, Shri Brijesh Kumar, from ONGC, Shri S. Chandrashekhar, Vice President, SPG Mumbai Chapter and other senior dignitaries and geoscientists from ONGC, RIL and Essar Oil Ltd.

Shri Deepankar Borgohain, Regional Sales Manager, EMGS presented the first talk of the morning session “an Introduction to EM and how it can add value in exploration”. He discussed about Controlled Source Electromagnetic (CSEM) methods to measure resistivity and how it can serve as an indicator of hydrocarbon saturation in sediments. The fact was emphasized as to how EM data complements the seismic data and increases its credibility. A few case studies were discussed indicating the high success percentage of hydrocarbon finds post- CSEM surveys and studies. He dealt with the Industry Assessment of the application of EM and also discussed about the high success rate of CSEM with testimonials from E&P giants like Shell and Exxon Mobil.

Shri Deepak Kumar talked about “Understanding sub-basalt plays through EM”. A comparison of the imaging resolution of seismic vs. CSEM/MT was made, arising due to the fact that their signal frequency ranges are quite different. It was also demonstrated using synthetic studies, how CSEM can overcome the challenges faced by seismic in imaging below a basalt layer and how it can resolve imaging of deep basement. Results of many real case studies were presented to

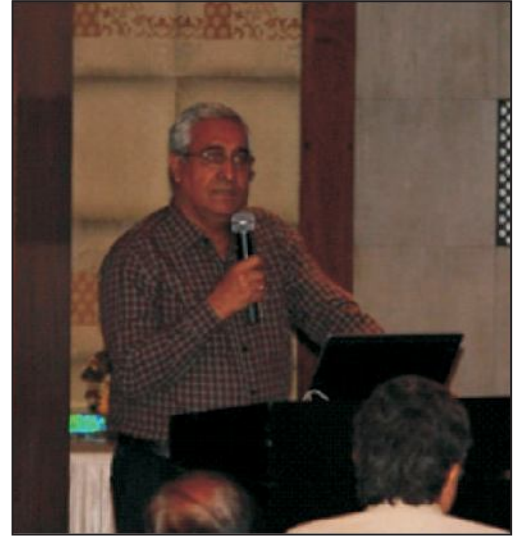
show that MT and CSEM can complement seismic in sub-basalt settings; the thickness of a basalt layer can be determined by CSEM; EM methods have lower resolution but better penetration.

Shri Ritesh Mohan Joshi started his discussion on “Identifying Stratigraphic Traps using CSEM”. A few case studies from different parts of the world were taken up highlighting the potential of CSEM in identifying stratigraphic traps. He showed that CSEM is able to identify stratigraphic traps as well as it can help in identifying new targets when applied on a regional scale. He also talked about Reserves Estimation with 3D EM stating that net reservoir rock volume is the main uncertainty in exploratory reserves estimation. 3D CSEM data conveys information about net reservoir rock volume and reservoir resistivity; so integration with other data (interpretation, well logs etc.) can lead to larger reductions in uncertainty. He emphasised about Looking through the haze how CSEM can improve reservoir imaging where Seismic struggles. It was demonstrated by him how CSEM survey and inversion work undertaken can be used as a tool to reveal the presence of electrical resistive anomalies in the subsurface where conventional methods such as seismic imaging struggle due to gas seepage. Calibration with well data shows a very good match of the resistivity distribution from CSEM and well-log. 3D post inversion modeling studies suggest that the reservoir is very sensitive to CSEM even if the shallow resistive features exist.

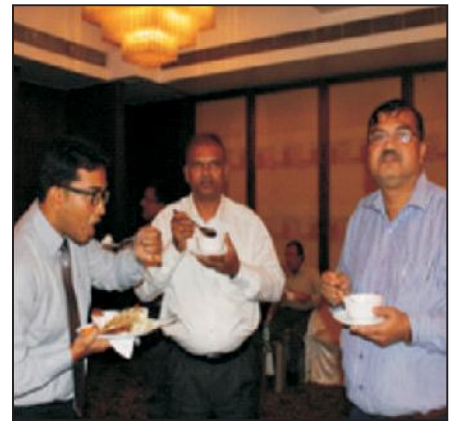
A number of thought-provoking questions and issues were debated. The programme ended with felicitation of the speakers with mementos; concluding remarks and vote of thanks by Shri Chaman Singh, and feedback from the participants. All the speakers, ONGC, sponsors of the session- EMGS and all members of SPG Mumbai Chapter working in various E & P companies were acknowledged by the executive body of the chapter.



Speakers from M/S EMGS Shri Deepankar Borgohain, Shri Deepak Kumar and Shri Ritesh Mohan Joshi making their presentations



Participants attending the workshop and Shri Chaman Singh, GGM (GP), ONGC, presenting concluding remarks.



Interaction and discussion continued even during tea/lunch breaks.

A Talk on Broadband Seismics

A talk on “Broadband Seismics- Real Value Addition” by Mr. MV Ramanamurthy, Depth Imaging Supervisor, PGS, Mumbai was held on 17th July at Navi Mumbai. More than seventy geoscientists from Navi Mumbai attended the

programme at SPIC, ONGC, Panvel. This talk was arranged by the chapter for the benefits of geoscientists especially from ONGC, Navi Mumbai who could not attend the joint workshop of EAGE/SPG on Broadband Seismic. He reviewed recent developments in Broadband Seismic and illustrated how these add value for seismic interpreters and geoscientists involved in reservoir characterization. While



On behalf of SPG Mumbai Chapter, Shri RD Bapat, GM (GP) welcomed the speaker with a bouquet of flower.



Mr. Ramanamurthy making his presentation.



Audience during the talk

low frequencies are key for imaging deeper structures, improving the accuracy of the seismic inversion. High frequencies are beneficial for enhancing spatial and temporal



Dr. S. Viswanathan, ED-CGS and President SPG Mumbai Chapter presenting a memento to Mr. Ramana Murthy.

resolutions. The value of broadband seismic for the interpreter and reservoir geophysics were well explained by