

Twin Workshops on Imaging Challenges Organized Successfully by SPG in Collaboration with SEG & EAGE

Society of Petroleum Geophysicist (SPG), India, along with SEG (Society of Exploration Geophysicists, USA) and EAGE (European Association of Geoscientists & Engineers), in a first-of-its-kind collaborative initiative, organised two joint workshops on Imaging Challenges in sub-basalt and foothills, at Dehradun on Feb. 22-23, 2019. The two day event held at the Technical Interaction Center (TIC) of GEOPIC saw a total of around 165 delegates, 37 invited speakers and 30 invitees from major NOCs like ONGC, OVL, OIL, BPRL, GAIL etc. and petroleum companies from abroad, like Ecopetrol, Shell, Schlumberger, Shearwater, UK, BGP International, Volcanic Basin Petroleum Research, Oslo, V&G Exploration etc. The academia was well represented by participants from premium research Institutes in India like IIT Mumbai, IIT Kanpur, Wadia Institute of Himalayan Geology (WIHG) etc. as well as from abroad (IPGP, France, University of Grenoble Alpes).

Director (E), ONGC & Patron SPG, India Mr. A.K. Dwivedi was the Chief Guest in the Inaugural Session for the first workshop, "Sub-basalt Exploration in Asia and Pacific", which was also graced by Dr. Kalachand Sain, Director-Wadia Institute of Himalayan Geology (WIHG), Dr. Nancy Jo House, former President SEG, USA and Dr. Gladys Ethel Gonzalez, former President EAGE and Mr. D. Purkayastha, ED-Head - EXCOM, ONGC and President SPG, India. In his welcome address, Mr. D. Purkayastha welcomed the guests, delegates and speakers and spoke about the relevance of the topics of the workshop particularly in the context of 'difficult oil'. He also described the background as to how the workshops were conceived and the efforts that went behind in bringing them to fruition. Dr Nancy Jo House and Dr Gladys Ethel Gonzalez, spoke about their optimism that the workshops would live up to the expectations as envisioned and expressed their elation in endeavouring to collaborate with SPG, India for the same. Dr Kalachand Sain, hoped that the workshops would have significant takeaways for the participants.

In his inaugural address, Mr. A.K. Dwivedi, emphasised how workshops such as these could be great opportunities for the geoscientific community to seek answers to many of the challenges that beset them and thanked SEG & EAGE for



Director (E)-ONGC and other dignitaries inaugurating the workshop proceedings

joining hands with SPG for the current endeavour. He also stressed that while only 7 of the 26 sedimentary basins are established as hydrocarbon bearing, lack of actual understanding of the remaining basins may be largely responsible for success being elusive elsewhere, rather than the absence of petroleum systems there. He stated that role of seismic imaging would be of central to exploration efforts in frontier areas, going forward.

Thirteen technical papers (including six keynotes) and six posters were presented in the first day's workshop. Diverse topics were covered for sub-Basalt imaging like advanced seismic acquisition parameters designing (Wide Tow acquisition method, long offset, wide azimuth etc.); state of art processing techniques (like Tau-P domain processing, Non-Stretch mute technique, FWI etc.); Full waveform Tomography of wide angle data; Broadband processing and PSDM; Multi Physics Approach (Magnetotelluric method, CSEM, EM etc.) and so on. Different imaging challenges from various Indian basins (like Cambay, Kutch-Saurashtra, Kerala-Konkan basin) and foreign basins (like Rockall Basin, Ireland, Exmouth Plateau, UK Atlantic Margin) were discussed and possible solutions deliberated.

Director (E&D), Oil India Ltd., Dr P. Chandrasekaran inaugurated the second workshop, titled "Current Practice and



Director (E)-ONGC Mr. A.K. Dwivedi inaugurating the first day workshop (left) and delivering his inaugural address (right)

Advances in Foothills imaging”, held on Feb. 23, 2019. Also present on the occasion were Dr. Kalachand Sain, Director WIHG, Dr. Nancy Jo House & Dr Gladys Ethel Gonzalez, esteemed representatives from SEG & EAGE respectively, besides Mr. D. Purkayastha, President SPG, India. In his inaugural speech, Dr. P. Chandrasekaran emphasised on the importance of minimising uncertainties and risks as exploration shifts towards more and more difficult geographies and complex sub-surface geologies. He felt that the exploration community relies on seismic processing, perhaps more than any other single link in the exploration chain, to reduce those risks.

Ten technical papers and three posters were presented in the second day workshop. Various issues were covered for Thrust Fold Belt imaging like advanced seismic acquisition parameters designing (Wide azimuth acquisition, long offset, sparse spread, Single sensor acquisition etc.); state of art

processing techniques (Common Reflection Surface processing (CRS), 3D Elastic FWI, Optimum datum processing, anisotropic processing etc.); integration of active and passive seismic data for robust velocity model building and so on. Various imaging issues from several Indian basins (Himalayan foreland basins, Cachar fold Belt, Asam-Arakan Basin etc.) and foreign basins (like Western Qaidam Basin, China, Foothills of Colombia, Western Papuan Fold Belt etc.) were deliberated upon.

The deliberations at the workshops were aptly and succinctly summed up by Dr Nancy Jo House (SEG), Dr Gladys Ethel Gonzalez (EAGE), Prof. Satish C Singh (IPGP, France) and Mr Chirag Tyagi (Schlumberger).

Another highlight of the Joint Workshop was a field trip for the foreign delegates to familiarise them of structural and tectonic elements of Frontal Himalayan Fold-Thrust belt in the



Mr. D. Purkayastha, President SPG, India welcoming Director (E&D), Oil India Ltd., Dr. P. Chandrasekaran (left); Dr. Nancy Jo House, Former President SEG presenting her keynote speech (right)



Participants interacting in the poster session (left); Prof. Satish C Singh and Mr Chirag Tyagi summing up the workshop (right).



Faculty Dr Mohit Punia (Survey of India) showing Himalayan geological structure to the field participants