

## SPG, Chennai Chapter organized a technical webinar on 20<sup>th</sup> July 2022

A technical webinar was organized by SPG, Chennai Chapter on "Understanding Seismic AVAZ / VVAZ" on 20th July 2022. Dr. Anat Canning, Sr. Consultant with Aspentech SSE (Paradigm), Tel-Aviv, Israel, delivered the technical lecture. Dr. Anat is associated with Aspentech SSE (Paradigm) for over 25 years where she is Director, R and D. She has avidly contributed for quantitative imaging of earth subsurface using amplitude of seismic waves, reservoir characterization, quantitative Interpretation, seismic anisotropy, and AI technology.

The webinar session started with the welcome address by Dr. Sanjeev Tandon, GGM –Head Geophysical Services and President–SPG, Chennai Chapter, followed by opening remarks by Shri R. K. Dhasmana, ED- Basin Manager, KG-PG Basin, and Patron - SPG Chennai Chapter and Shri C. B. Yadava, ED- Basin Manager, Cauvery Basin.

In his welcome address, Dr. Sanjeev Tandon welcomed the participants and conveyed that the latest advancements in seismic data acquisition technology and the role of anisotropy has dramatically increased the use of wide-azimuth, high-density seismic data acquisition. This has led to the acquisition of full azimuth data with the aim of enhancing the resolution of pay sands and pay elements. He highlighted that amplitude variation with azimuth (AVAZ) and velocity variation with azimuth (VVAZ), helps in determining the subsurface anisotropy in the form of fracture orientation and intensity. He outlined that this informative webinar will not only guide all geoscientists but would also educate all about seismic AVAZ and VVAZ.



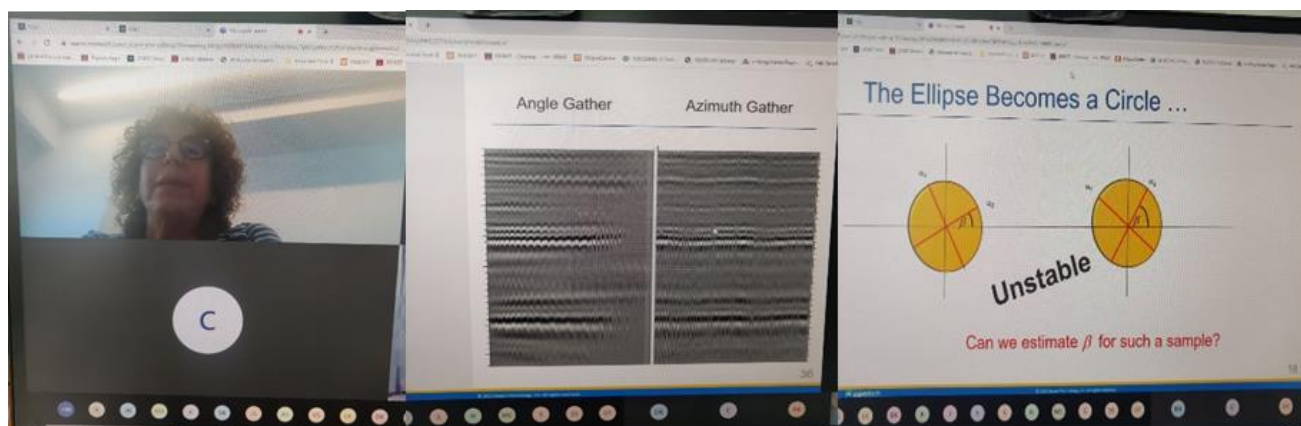
Dr Sanjeev Tandon, GGM- HGS and President - SPG Chennai Chapter delivering the welcome address.

The focus of the talk was on understanding seismic AVAZ and VVAZ. In her talk she explained the fundamentals of velocity variation with azimuth (VVAZ) and amplitude variation with azimuth (AVAZ). The AVAZ and VVAZ is

observed in the presence of vertical and horizontal transverse isotropic (VTI and HTI) media in the subsurface. VVAZ analysis is carried out to estimate and correct for azimuthal velocity variations which give rise to sinusoidal oscillations observed at larger offsets with azimuthal anisotropy. AVAZ is the estimation of amplitude changes along offset and azimuth due to presence of vertical and horizontal fractures. The talk presented the theory, model examples and seismic data examples from onland and offshore areas. She discussed various methods and parameters that affects the estimation of fracture orientation and fracture density. She emphasised the importance of reliability which depends on amplitude, continuity, anisotropy, and stability.

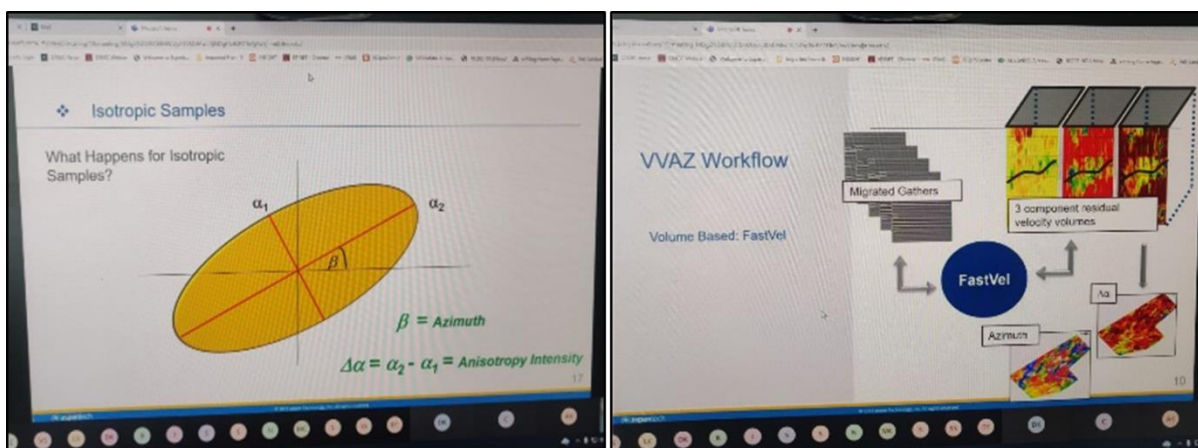


Shri R. K. Dhasmana, ED- Basin Manager, KG-PG Basin and Patron - SPG Chennai Chapter and Shri C.B. Yadava, ED- Basin Manager, Cauvery Basin delivering their opening remarks.




*Dr. Anat Canning delivering her lecture*

She also explained that the AVAZ and VVAZ analysis will be affected in the presence of acquisition effects, poor approximation of processing, isotropic samples, illumination issues, acquisition footprints and selection proper migration algorithm.



*Glimpses from the webinar session*

The webinar session was attended by members of SPG from across almost all the work centres of ONGC especially the geoscientists from GPS, Chennai, KG-PG Basin, Cauvery Basin, IRS, different RCC's, SPIC, GEOPIC, and Frontier Basins. The lecture was well appreciated and praised by one and all for its contents and thoughtful discussion provided by the presenter. During the webinar session participants actively participated and in the end, discussions were held wherein participants asked various thought provoking questions related to AVAZ and VVAZ.

The vote of thanks was presented by Executive member SPG, Shri Biva Sharma, Sr. Geophysicist (S), and Shri Lakshman Katherla, Chief Geophysicist (S), Joint Secretary, SPG-Chennai, aptly compered the session. 

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We therefore invite contribution of technical papers, review papers, case studies, etc. for publication in GEOHORIZONS. Authors are encouraged to 'moisten' their text with as much levity and practicality as possible. The use of good graphics can greatly help the process of communicating an idea or concept.

This should not seem a difficult task for the SPG members, and we hope we all find the joy of learning from each other, to better ourselves and our SPG.

Manuscripts should be emailed directly to the SPG office ([spgindia@rediffmail.com](mailto:spgindia@rediffmail.com)).

- Editor