DeepWave Consortium – 1st Sponsor Meeting Agenda
December 13th – 14th

جامعة الملك عبدالله للعلوم والتقنية
King Abdullah University of Science and Technology

DAY 1 – December 13th, 2022

3:30 pm Introduction [Tariq Alkhalifah, Matteo Ravasi]

Session 1 | ML-assisted subsurface characterization and monitoring

4:00 pm *Enabling full-waveform inversion to recover salt bodies in challenging conditions* [Abdullah AlAli]

4:15 pm *Prior probability regularized FWI using generative diffusion models* [Fu Wang]

4:30 pm *RockAVO: Data-driven Direct Petrophysical Inversion of Pre-Stack Seismic Data* [Miguel Corrales]

4:45 pm *Joint Microseismic Event Detection and Location Based on a Detection Transformer* [Yuanyuan Yang]

5:00 pm Discussion

Session 2 | Closing the gap between training and testing data

5:30 pm *Seismic denoising without labels: Self-supervised, blind-spot networks for random and coherent noise suppression* [Sixiu Liu]

5:45 pm *SSDeblend: integrating self-supervised denoising in inversion based seismic deblending* [Nick Luiken]

6:00 pm *Deep learning-based regularization of seismic inversion* [Juan Romero]

6:15 pm *End-to-end seismic processing with deep learning: StorSeismic* [Randy Harsuko]

6:30 pm *Efficient Seismic Facies Classification Using Transformer-based Masked Autoencoders* [Mustafa Alfarhan]

6:45 pm Discussion

7:15 pm Feedback – Day 1 Wrap-Up

DAY 2 – December 14th, 2022

3:30 pm Day 2 Opening Remarks

Session 3 | Physics-driven machine learning for geophysical modelling and inversion

3:45 pm *A flexible seismic tomography framework using machine learning* [Hasyim Taufik]

4:00 pm *Simultaneous beyond aliasing interpolation and local slope estimation with PINNs* [Francesco Brandolin]

4:15 pm *Microseismic source imaging using PINNs with hard constraints: An application to Hydraulic Fracturing Data* [Xinquan Huang]

4:30 pm *Data-driven discovery of a seismic wave equation* [Shijun Cheng]

4:45 pm Discussion

Session 4 | By-products of the AI revolution

5:15 pm *Regularized Probabilistic Seismic Inversion with CNN-based Plug-and-Play framework* [Muhammad Izzatullah]

5:30 pm *GPU programming at the fingertip: the NVIDIA-KAUST Hackathon project* [Juan Romero, Miguel Corrales]

5:45 pm Discussion

6:15 pm Consortium Github Repo [Christos Tzivanakis]

6:30 pm Business Meeting (Sponsors only)

The listed times are in Arabian Standard Time [UTC/GMT +3 hours]
3:30 pm AST = 1:30 pm CET = 6:30 am CST

✉ deepwave@kaust.edu.sa

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https://deepwave.kaust.edu.sa/