

CREWES Annual Meeting 2023 - Technical Program - Day 1

Dec 7 2023

Time	Session	Moderator	Title	Speaker
8:40AM	WELCOME		Welcome and overview	<i>Kris Innanen</i>
9:00AM	ACQ-FIELD-DAS	Kris Innanen	Multicomponent DAS sensing: smaller sensors and field testing	<i>Kevin Hall</i>
9:20AM			Preparing the physical modeling facility to simulate injection/storage of fluids and gases in complex structures	<i>Kevin Bertram</i>
9:40AM			Direct measurement of frequency-dependent phase velocities from the Snowflake VSP data	<i>Chioma Chineke</i>
10:00AM			COFFEE	
10:30AM	CO2-TL-GEO	Don Lawton	Developments in CCS MMV from a regulatory perspective and an introduction to SPARSE	<i>Don Lawton</i>
10:50AM			Sparse seismic monitoring at CMC Newell County CO ₂ storage facility	<i>Brendan Kolkman-Quinn</i>
11:20AM			New mathematical tools to parameterize and simplify sparse monitoring with full waveform inversion	<i>Kris Innanen</i>
11:40AM			Geothermal initiatives at the University of Calgary	<i>Roman Shor</i>
12:00PM			LUNCH	
1:30PM			Downhole drillstring vibration and bit source modelling	<i>Scott Hess</i>
1:50PM			Implicit elastic full waveform inversion: application to the Snowflake dataset	<i>Tianze Zhang</i>
2:10PM			Targeted nullspace shuttles for full waveform time-lapse seismic monitoring and CO ₂ detection thresholds	<i>Kim Pike</i>
2:30PM			COFFEE	
2:50PM			3D time-lapse RTM of data from the Snowflake 2018-2022 experiments	<i>Xiaohui Cai</i>
3:10PM			Time-lapse inversion using the FD-injection method	<i>He Liu</i>
3:30PM			Quantum solutions for energy and environmental challenges	<i>Shahpoor Moradi</i>
3:50PM	Invited Talk		Discovering the deep: geophysical tools for identifying biodiversity hotspots in the deep ocean	<i>Rachel Lauer</i>
4:10-5:45PM			POSTER SESSION	

CREWES Annual Meeting 2023 - Technical Program - Day 2

Dec 8 2023

Time	Session	Moderator	Title	Speaker
8:30AM	FWI-AMP-UNC	Kris Innanen	Hamiltonian Monte Carlo methods for uncertainty quantification in waveform inversion	<i>Jinji Li</i>
8:50AM			Uncertainty quantification in rock physics full waveform inversion	<i>Qi Hu</i>
9:10AM			3D FWI of the CREWES Snowflake I and II VSP data	<i>Hyeong-Geun Ji</i>
9:30AM			Simultaneous prediction of velocity and angle-dependent reflectivity in time domain FWI	<i>Ziguang Su</i>
9:50AM			COFFEE	
10:30AM			Estimation of rock physics properties via FWI of VSP data recorded by accelerometer and fiberoptic sensors	<i>Qi Hu</i>
10:50AM	ML-DSI-CMP	Daniel Trad	Towards realistic imaging and testing of full waveform inversion algorithms	<i>Daniel Trad</i>
11:10AM			Advanced CO ₂ interpretation from 4D Slepner seismic images using transformers	<i>Luping Qu</i>
11:30AM			Robust seismic data denoising with recorruped-to-recorruped zero-shot unsupervised deep learning	<i>Ji Li</i>
11:50AM			LUNCH	
1:20PM			Methods for and high performance computing optimizations of 5D interpolation	<i>Kai Zhuang</i>
1:40PM			Clifford neural operators as a tool to learn and describe elastic wavefield displacements	<i>Tianze Zhang</i>
2:00PM			A machine learning alternative to sparseness	<i>Paloma Lira Fontes</i>
2:20PM			COFFEE	
3:00PM			Stratigraphically-consistent seismic profiles for geologically-informed machine learning interpretation	<i>David Emery</i>
3:20PM			Time-lapse data shaping with transformer encoder neural networks	<i>Jorge Monsegny</i>
3:40PM	Invited Talk		Repeatability indicators in time lapse seismology and their application to the Slepner CO ₂ storage project	<i>Brian Russell</i>
4:00PM			WRAP-UP	

ACQ-FIELD-DAS Acquisition, field applications and DAS

CO2-TL-GEO CO₂, Time-lapse and Geothermal applications

FWI-AMP-UNC Full waveform inversion, amplitude inversion, and uncertainty quantification

ML-DSI-CMP Machine learning, data science and computation