The 7th International Symposium on Three-Dimensional Electromagnetics

Earth Science Building, University of British Columbia
2207 Main Mall, Vancouver, BC V6T 1Z4

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Sunday, November 12

6pm - 8pm	Informal gathering at Browns Crafthouse UBC *101 - 6111 University Blvd*

Monday, November 13

8:30 - 9:00	Registration
9:00 - 9:30	Welcome and Introductory Remarks
9:30 - 10:30	Forward Modelling (part 1)
10:30 - 11:00	Coffee Break
11:00 - 12:00	Forward Modelling (part 2)
12:00 - 1:30	Lunch
1:30 - 3:00	Data: Physics & Theory
3:00 - 3:30	Coffee Break
3:00 - 4:15	Poster Lightning Talks
4:15 - 6:30	Poster Reception

Tuesday, November 14

9:00 - 10:30	Inversion (part 1)
10:30 - 11:00	Coffee Break
11:00 - 12:00	Inversion (part 2)
12:00 - 1:30	Lunch
1:30 - 3:00	Data Acquisition & Instrumentation (part 1)
3:00 - 3:15	Group Photo
3:15 - 3:45	Coffee Break
3:45 - 5:15	Data Acquisition & Instrumentation (part 2)
5:30 - 10:00	Banquet at Cecil Green Park House *6251 Cecil Green Park Rd*

Wednesday, November 15

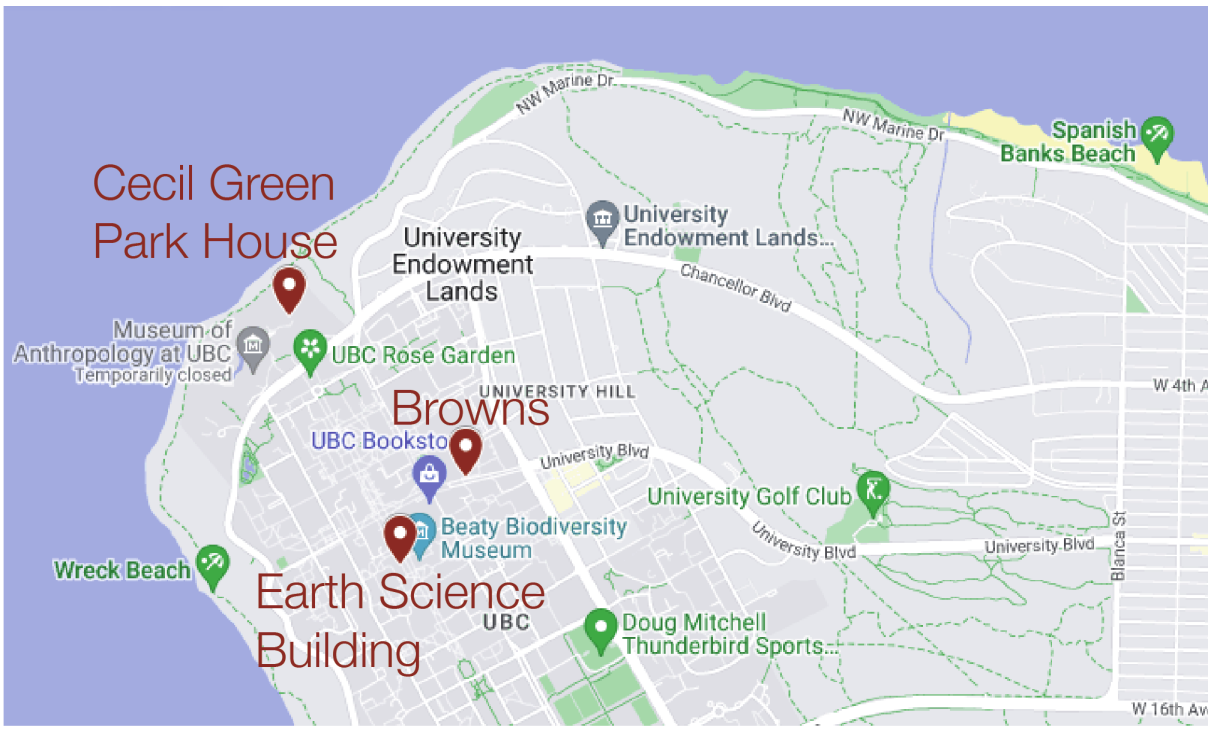
9:30 - 10:30	Case Studies (part 1)
10:30 - 11:00	Coffee Break
11:00 - 12:00	Case Studies (part 2)
12:00 - 12:30	Concluding remarks

Locations

Sessions: ESB 1012
Earth Science Building at UBC
2207 Main Mall, Vancouver, BC V6T 1Z4

Ice Breaker: Browns Crafthouse UBC
6111 University Blvd Unit 101, Vancouver, BC V6T 0C7

Banquet: Cecil Green Park House
6251 Cecil Green Park Rd, Vancouver, BC V6T 1X8



Thanks to the sponsors of 3DEM-7

And thanks to the organizers

Monday, November 13

8:30 - 9:00 Registration

9:00 - 9:30 Welcome and Introductory Remarks
Lindsey Heagy and David Alumbaugh

9:30 - 10:30 Forward Modelling (part 1)
chair: Dikun Yang

- FEMALY: A Finite Element MAtlab LibrarY for Electromagnetics
  Klaus Spitzer, Jan Blechta, Jana Börner, Ralph-Uwe Börner, Michael Eiermann, Oliver Ernst, and Mathias Scheunert
- An adaptive finite element solver for three-dimensional electromagnetic inductions
  Jianbo Long

10:30 - 11:00 Coffee Break

11:00 - 12:00 Forward Modelling (part 2)
chair: Evan Um

- On the Robustness, Efficiency and Scalability of an Iterative Framework in Combination With the Block-Based PREconditioner For Square Blocks PRESB Applied To Controlled-Source Electromagnetic Modelling
  Michael Weiss, Thomas Kalscheuer, and Maya Neytcheva
- Rapid 3D finite-difference modelling for magnetotellurics based on Reduced Basis Method
  Hao Dong and Yijie Cui

12:00 - 1:30 Lunch

1:30 - 3:00 Data: Physics & Theory
chair: Klaus Spitzer

- Understanding problems in old MT data using modern methods
  Alan G. Jones, Randall Mackie, and Wolfgang Soyer
- Negative transients in central-loop time-domain electromagnetic data: Induced polarization or 3D coupling effect?
  Dikun Yang, Ming Cheng, and Qiang Luo
- Impacts of magnetic permeability on electromagnetic data collected in settings with steel-cased wells
  Lindsey J. Heagy and Douglas W. Oldenburg

3:00 - 3:30 Coffee Break

3:00 - 4:15 Poster Lightning Talks

4:15 - 6:30 Poster Reception

- 3D inversion of semi-airborne magnetometric resistivity data
  Zhongchang Chen and Dikun Yang
- Conductivity structure beneath Australia constrained by 3-D inversion of MT Tippers in spherical geometry
  Filippo Cicchetti
- 3D AMT/MT case histories from Brazil
  Patricia de Lugão
- 3D minimum-structure inversion for CSEM problems using potentials and

unstructured tetrahedral grids
K.B. Kara and C.G. Farquharson

Targeting epithermal Au-Ag using helicopter VTEM 1D resistivity and 3D magnetic inversion results, and radiometric data at Lawyers Project, North-Central BC, Canada
Karl Kwan, Jean Legault, Jim Greig, Ewan Webster and Mark Hanki

A parallel adaptive finite-element method for 3-D large-scale controlled-source electromagnetic forward modelling with hierarchical tetrahedral grids
Z. Liu, Z. Ren, H. Uao, J. Tang, X. Lu, and C.G. Farquharson

Fast 3D magnetotelluric forward modeling using survey decomposition
Lian Liu, Dikun Yang

Using convolutional neural networks to classify UXO with multicomponent electromagnetic induction data
Jorge Lopez-Alvis, Lindsey J. Heagy, Douglas W. Oldenburg, Stephen Billings and Lin-Ping Song

2.5D Inversion of frequency-domain Land CSEM data using Broyden's method
Ali Mohand-Saïd

DESMEX - Evolution of Semi-airborne Controlled-source Electromagnetics for Mineral Exploration and Beyond
The DESMEX Team

3D Casing-Source Electromagnetic Modeling for CO_2 Plumes and Enhanced Geothermal Systems Monitoring
Evan Schankee Um and David L. Alumbaugh

Petrophysically constrained joint inversion of multi-physical data using the extended alternting direction method of multipliers
Ke Wang, Dikun Yang

Comparison of MVI with sparse norm susceptibility inversion accounting for demagnetization
John M. Weis, Lindsey J. Heagy, and Douglas W. Oldenburg

Reparametrizing the Geophysical Inverse Problem using a Convolutional Neural Network
Anran Xu and Lindsey Heagy

Tuesday, November 14

9:00 - 10:30 Inversion (part 1)
chair: Toshi Uchida

Resolving bottlenecks of 3D controlled-source electromagnetic Gauss-Newton inversion
Anna Avdeeva, Rune Mittet and Ole Martin Pedersen

Surface geometry inversion of TEM data for thin, dipping conductors
Xushan Lu, Colin Farquharson and Peter Lelièvre

Including geological orientation information into geophysical inversions with unstructured tetrahedral meshes
Mitra Kangazian, and Colin G. Farquharson

10:30 - 11:00 Coffee Break

11:00 - 12:00 Inversion (part 2)
chair: Colin Farquharson

Hybrid OCCAM-Conjugate Gradients Inversion Algorithms with Applications to Marine CSEM data
Gary D. Egbert, Naser Meqbel and Paulo Werdt

3D inversion of frequency-domain controlled source electromagnetic data for hydraulic fracturing fluid imaging with the effect of steel casings
Ying Hu, and Dikun Yang

12:00 - 1:30 Lunch

1:30 - 3:00 Data Acquisition & Instrumentation (part 1)
chair: Alan Jones

A Modeling Assessment of Using Optical Fiber Devices For Electric Field Measurements
David Alumbaugh, Evan Um, Michael T. V. Wylie and Bjorn Paulsson

Copper permalloys for fluxgate magnetometer sensors
B. Barry Narod, David M. Miles

Interferographic TEM Beamforming Resolution
Bryan James, Kyubo Noh, Andrei Swidinsky, Johannes Stoll, and Daryl Ball

3:00 - 3:15 Group Photo

3:15 - 3:45 Coffee Break

3:45 - 5:15 Data Acquisition & Instrumentation (part 2)
chair: Jean Legault

UAV-based semi-airborne CSEM for mineral exploration - 3D joint inversion of scalar and vector magnetometer data
Raphael Rochlitz, Philipp Kotowski, Thomas Günther, and Michael Becken

Enhancing Subsurface Imaging in Mineral Exploration through Optimized large-scale Semi-Airborne Surveys: Synthetic Modelling and field Data
Saeed Nazari, Raphael Rochlitz, and Thomas Günther

Airborne Natural Source Electromagnetics Using an Arbitrary Base Station
Devin C. Cowan, Lindsey J. Heagy and Douglas W. Oldenburg

5:30 - 10:00 Banquet at Cecil Green Park House
6251 Cecil Green Park Rd, Vancouver, BC V6T 1X8

Wednesday, November 15

9:30 - 10:30 Case Studies (part 1)
chair: Patricia de Lugao

Comparison of 3D finite-element and finite-difference inversion of magnetotelluric data in Okuaizu geothermal area, northern Japan
Toshihiro Uchida and Yusuke Yamaya

3D inversion of onshore controlled source electromagnetic data in the Kusatsu-Shirane Volcano
Keiichi Ishizu, Yasuo Ogawa, Kuo Hsuan Tseng, Takahiro Kunitomo, Norihiro Kitaoka, Grant Caldwell, Takuto Minami, Sohei Serita, Hiroshi Ichihara, Ted Bertrand, and Wiebke Heise

10:30 - 11:00 Coffee Break

11:00 - 12:00 Case Studies (part 2)
chair: Raphael Rochlitz

3D ZTEM Airborne Natural Field EM & Magnetic Inversion and Mineral Targeting Results over the Berg Porphyry Copper Project, near Houston, British Columbia
Jean M. Legault, Karl Kwan, and Shane Ebert

AEM Surveys Applied for Iron Formation Mapping: A Proxy for Iron Ore Exploration
Marco Antonio Couto Junior, Dionisio Uendro Carlos and Raphael Fernandes Prieto

12:00 - 12:30 Concluding Remarks

About 3DEM

The 3DEM symposium is organized by the Hohmann-Wannamaker Trust (https://www.hohmannwannamakertrust.org).

The Hohmann-Wannamaker Trust (HWT) was established in December 2022 as the continuation of the Gerald W. Hohmann Trust for Teaching and Research in Electromagnetic Geophysics, following the tragic death of trustee Phil Wannamaker on August 22.

3DEM-7 will be dedicated to honoring Phil's legacy in the worldwide EM community as a scientist, educator, colleague, and friend.