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Aarhus University

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U.S. Geological Survey

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Florida Atlantic University

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Aarhus University

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Stanford University

Kisa Mwakanyamale
Illinois State Geological Survey
Scientific Program

SUNDAY, JUNE 09

9:00 a.m.– 4:00 p.m.  Airborne Electromagnetic Data Processing and Inversion: Day One
Convener(s): Esben Auken, Anders Christiansen
Davie West Building, DW107

MONDAY, JUNE 10

9:00 a.m.– 4:00 p.m.  Airborne Electromagnetic Data Processing and Inversion: Day Two (Optional)
Convener(s): Esben Auken, Anders Christiansen
Davie West Building, DW107

9:00 a.m.– 5:00 p.m.  From AEM Data to 3D Hydrogeological Conceptual Model
Convener(s): Mats Gulbrandsen
Davie West Building, DW109

5:00 p.m.– 7:00 p.m.  Ice Breaker
Student Union, SD105

TUESDAY, JUNE 11

9:00 a.m.– 9:15 a.m.  Welcome & Announcements
Convener(s): Xavier Comas
Davie West Building, DW103

9:15 a.m.– 9:45 a.m.  Keynote
Convener(s): Xavier Comas
Davie West Building, DW103

Denys Grombacher | An airborne EM survey of the McMurdo Dry Valleys in Antarctica (Invited)

9:45 a.m.– 12:00 p.m. Energy, Minerals, and Hazards
Convener(s): Paul Bedrosian
Davie West Building, DW103

9:45 a.m. –9:50 a.m. Paul Bedrosian | Introduction to Session

9:50 a.m. –10:15 a.m. Timothy J Munday | The combined use of airborne magnetic and electromagnetic methods for cover characterisation in the exploration for buried mineral systems (Invited)

10:15 a.m. –10:35 a.m. Marco Antonio Couto Jr. | Inversion of AEM Data With Strong IP Effects Over Metallic Sulfide Dissemination Within Banded Iron Formations

10:35 a.m. –11:00 a.m. Break

11:00 a.m. –11:20 a.m. Olawale Olakunle Osinowo | Analysis of Time Domain Airborne Electromagnetic (TDEM) Data for Evaluating Gold Mineralization Potential of Ilesha Schist Belt, Southwestern Nigeria

11:20 a.m. –11:40 a.m. Paul Bedrosian | Three-dimensional Structure of the Decorah Impact Structure: Constraints from AEM and potential-field modeling

11:40 a.m. –12:00 p.m. Wale Osinowo | Analysis of High Resolution Aeromagnetic (HRAM) Data of Lower Benue Trough, Southeastern Nigeria for Hydrocarbon Potential Evaluation

12:00 p.m.– 1:00 p.m. Lunch
Student Union, SD105

1:00 p.m.– 4:15 p.m. AEM System, Processing and Inversion Research and Development
Convener(s): Burke Minsley, Esben Auken
Davie West Building, DW103

1:00 p.m. –1:10 p.m.  **Burke J Minsley** | Announcements & Introduction to Session

1:10 p.m. –1:35 p.m.  **Anders Vest Christiansen** | Sensitivity functions of airborne EM systems over layered models  (*Invited*)

1:35 p.m. –1:55 p.m.  **Thomas Mejer Hansen** | Fast probabilistic inversion of AEM data using approximate rejection sampling

1:55 p.m. –2:15 p.m.  **Nicklas Skovgaard Nyboe** | Primary Field Compensation in Airborne TEM – Refining a Proven Technique through the Integration of High and Low Moment Information Projected onto a Common Exponential Basis

2:15 p.m. –2:35 p.m.  **Nathan Leon Foks** | GeoBIPy – Geophysical Bayesian Inference in Python

2:35 p.m. –3:10 p.m.  Break

3:10 p.m. –3:30 p.m.  **Esben Auken** | Large scale Laterally Constrained Inversion of over steeping IP decays in AEM

3:30 p.m. –3:50 p.m.  **Noah Dewar** | Estimating the Depth to the Saturated Zone from Airborne Electromagnetic Data

3:50 p.m. –4:10 p.m.  **Xavier Comas** | Inferring peat thickness in Indonesian Peatlands using Airborne Electromagnetic methods

4:10 p.m. –4:15 p.m.  **Burke J Minsley** | Closing Announcements

4:15 p.m. – 5:30 p.m.  **Poster Session**
Convener(s): John Lane
Davie West Lobby

P-02  **Huai Feng Sun** | Modeling and inversion of semi-airborne transient electromagnetic data

P-03  **Marian Takac** | Detecting Magnetic Anomalies Of Crater Fields By a Drone
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WEDNESDAY, JUNE 12

9:00 a.m.– 9:15 a.m.  Welcome & Announcements
Convener(s): Esben Auken, Xavier Comas
Davie West Building, DW103

9:15 a.m.– 12:00 p.m.  Aquifer Mapping Programs I
Convener(s): Anders Vest Christiansen, Kisa Mwakanyamale
Davie West Building, DW103

9:15 a.m. –9:25 a.m.  Anders Vest Christiansen | Introduction to Session

9:25 a.m. –9:50 a.m.  Wade Hampton Kress | Regional-scale Airborne Geophysics Reveals Hidden Complexity of Mississippi River Alluvial Valley (Invited)

9:50 a.m. –10:10 a.m.  Jared Dale Abraham | Comparison of a decade of examples of AEM vs Drilling results for Groundwater Exploration: The Good, the Bad and the Ugly

10:10 a.m. –10:30 a.m.  Mats Lundh Gulbrandsen | Multiple Point Statistics – A Case Study from Indian Wells Valley, California

10:30 a.m. –11:00 a.m.  Break

11:00 a.m. –11:20 a.m.  Theodore H Asch | Airborne Electromagnetics for Characterizing Water Quality Due to Saltwater Intrusion

11:20 a.m. –11:40 a.m.  Andrea Viezzoli | Reduction of Ambiguity in Modelling and Hydrogeological Interpretation of Airborne EM Data in Complex Coastal Environment.

11:40 a.m. –12:00 p.m.  Timothy J Munday | Treading where ground geophysics can’t venture – the use of airborne geophysics to characterise remote freshwater lens systems in tropical island settings in Northern Australia.

12:00 p.m.– 1:00 p.m.  Lunch
Student Union, SD105
1:00 p.m.– 3:50 p.m. **UAS Geophysics I**  
Convener(s): John Lane, Cian Dawson  
Davie West Building, DW103

1:00 p.m. –1:10 p.m. **John W Lane Jr** | Announcements & Introduction to Session

1:10 p.m. –1:35 p.m. **Garret Veloski** | The Use of Drone Geophysics to Locate and Map Legacy Oil and Gas Infrastructure *(Invited)*

1:35 p.m. –1:55 p.m. **Yuleika Madriz** | UAS aeromagnetic survey and hyperspectral data for mineral exploration

1:55 p.m. –2:15 p.m. **Ronald Bell** | MagArrowTM Drone Enabled Aeromagnetic Surveys in the Great Sand Dunes National Park - San Luis Valley, CO

2:15 p.m. –2:35 p.m. **Rongyi Qian** | The study of Low-altitude Rapid Detection Technology base on UAV in Complex Environment

2:35 p.m. –3:10 p.m. Break

3:10 p.m. –3:30 p.m. **Huafeng Sun** | UAV-based tilt photogrammetry for fast and accuracy 3D terrain acquisition

3:30 p.m. –3:50 p.m. **Cian Dawson** | Low-altitude airborne surveys for hydrologic studies: lessons learned and a path forward

5:00 p.m.– 7:00 p.m. **Conference Banquet**  
Student Union, SD105

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**THURSDAY, JUNE 13**

9:00 a.m.– 9:15 a.m. **Welcome & Announcements**  
Convener(s): Burke Minsley  
Davie West Building, DW103

9:15 a.m.– 10:20 a.m. **UAS Geophysics II**
Convener(s): Cian Dawson, John Lane
Davie West Building, DW103

9:15 a.m. – 9:20 a.m. **Cian Dawson** | Introduction to Session

9:20 a.m. – 9:40 a.m. **Lanbo Liu** | Formation conductivity inverted from multi-frequency, multi-elevation electromagnetic induction data

9:40 a.m. – 10:00 a.m. **Huafeng Sun** | UAV-based semi-airborne transient electromagnetic survey in challenging terrain environment

10:00 a.m. – 10:20 a.m. **John W Lane Jr** | Development of a Drone-deployed Ground-Penetrating Radar System for Non-contact Bathymetry of Freshwater Systems

10:20 a.m. – 10:45 a.m. **Break**
Davie West Lobby

10:45 a.m. – 12:00 p.m. **Aquifer Mapping Programs II**
Convener(s): Lyndsay Ball, Wade Kress
Davie West Building, DW103

10:45 a.m. – 10:55 a.m. **Lyndsay B Ball** | Introduction to Session

10:55 a.m. – 11:20 a.m. **Ken Lawrie** | The Exploring for the Future (EftF) Groundwater Program: Successful Application of Airborne Geophysics within a Multi-physics, Inter-disciplinary Approach for Rapid Mapping and Assessment of Groundwater Systems and Resources in Frontier Palaeozoic Sedimentary Basins and Cenozoic Paleovalleys in Northern Australia *(Invited)*

11:20 a.m. – 11:40 a.m. **Benoit Vittecoq** | Contribution of an heliborne EM-magnetic survey to the understanding of the hydrogeological functioning of a volcanic island (Martinique – Caribbean island)

11:40 a.m. – 12:00 p.m. **Subash Chandra** | Quantitative Application of AEM for Regional Groundwater Productivity in Fractured Basement Rocks

12:00 p.m. – 1:00 p.m. **Lunch**
Aquifer Mapping Programs III
Convener(s): Lyndsay Ball
Davie West Building, DW103

1:00 p.m.–1:05 p.m.  Lyndsay B Ball | Introduction to Session

1:05 p.m.–1:30 p.m.  Burke J Minsley | Airborne geophysical characterization of critical zone structure in a mountain headwater system, upper East River, Colorado (Invited)

1:30 p.m.–1:50 p.m.  Sebastian Uhlemann | Linking geomorphological and environmental indices with ground-based and airborne geophysical data to upscale bedrock properties of mountainous watersheds

1:50 p.m.–2:10 p.m.  Lyndsay B Ball | Hydrostratigraphic Model Development from Ground and Airborne Geophysical Surveys of the Western Hualapai Reservation near Grand Canyon West, Arizona, USA

2:10 p.m.–2:30 p.m.  Jesse Korus | Mapping the Boundary of the High Plains Aquifer in Nebraska with AEM and Hydraulic Head Data

2:30 p.m.–3:00 p.m.  Break
Davie West Lobby

3:00 p.m.–4:30 p.m.  Wrap-Up
Convener(s): Esben Auken, John Lane, Xavier Comas, Burke Minsley
Davie West Building, DW103

3:00 p.m.–3:20 p.m.  Introduction to White Paper and Next Steps

3:20 p.m.–4:15 p.m.  Panel

4:15 p.m.–4:30 p.m.  Xavier Comas | Closing Announcements
The workshop organizers acknowledge the following sponsors for their generous support: