



المؤتمر العالمي الثالث  
للجيوفيزياء الهندسية

Third International Conference  
on Engineering Geophysics

15–18 November | Al Ain, UAE

UNITED ARAB EMIRATES UNIVERSITY

15–18 NOV  
2015

# TECHNICAL PROGRAM

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جامعة الإمارات العربية المتحدة  
United Arab Emirates University

UAEU



دائرة الشؤون البلدية  
DEPARTMENT OF MUNICIPAL AFFAIRS  
بلدية مدينة العين  
AL AIN CITY MUNICIPALITY



# THIRD INTERNATIONAL CONFERENCE ON ENGINEERING GEOPHYSICS

## TECHNICAL PROGRAM

**Sunday, 15 November 2015**

**UAE University | Crescent Building | Auditorium**

### ORAL SESSION

08:00.....Registration and Coffee

09:45.....Welcome and HSE Moment

10:00.....Opening Ceremony

10:05.....Opening Speech

10:15.....Introduction to ICEG

10:20 .....**EG01: Keynote Speech: Adapting the Oil Exploration Model to Contaminated Site Characterization: A Cost Benefit Perspective**

Dr. John H. Bradford (Boise State University, President of SEG, 2015–16)

10:45 .....Coffee Break

11:00 .....**Women in Geoscience Panel**

Panelists:

Sheikha Al Maskari (Chairman, Al Maskari Holdings UAE)

Aseel Hamoodi (Vice President Talent & Capability Management, ADCO, UAE)

Prof. Sandra Vega (Researcher, Petroleum Institute, UAE)

Dr. Lorna Dawson (Head of Forensic Soil Science Senior Principal Research Scientist, James Hutton Institute, UK)

Organizer: Maria A. Capello (SEG Women Networking Chair)

12:30 .....Lunch

## ENGINEERING GEOPHYSICS

### Session I: Engineering Geophysical Applications for Civil and Industrial Construction Domains

R. Miller (Session Chair)

- 14:00 ..... **EG02: Geophysical and Geotechnical Techniques: Complementary Tools in Studying Subsurface Features** — H. Baker\* (UAE University), A. Gabr (UAE University), M. Djeddi (USTHB)
- 14:20 ..... **EG03: High Resolution Seismic Reflection in Geotechnical and Hydrogeological Applications** — M. G. Schreilechner\* (Joanneum Research), C. G. Eichkitz (Joanneum Research)
- 14:40 ..... **EG04: Progress in Using Geophysical Methods in Foundation Quality Assurance and Inspection. E. Niederleithinger\*** (BAM Federal Institute for Materials Research and Testing)
- 15:00 ..... **EG05: Seismic to Study Pavement** — N. Ryden\* (Lund University)
- 15:20 ..... Coffee Break

### Session II: Engineering Geophysical Applications for Civil and Industrial Construction Domains

H. Baker (Session Chair)

- 15:50 ..... **EG06: Reliability Maps for Seismic Tomography** — T. Fechner\* (Geotomographie GmbH), S. I. Ehosioko (University of Goettingen), S. Mackens (Geotomographie GmbH), L. Karl (Geotomographie GmbH), D. Tweeton (GeoTom LLC)
- 16:10 ..... **EG07: Use of Electrical Resistivity Tomography for Mapping the Extensions of an Existing Cavity, a Case Study from Doha, Qatar.** — M. K. Harb\* (Arab Center for Engineering Studies), E. Sharif (Arab Center for Engineering Studies), T. U. R. Sabir (Arab Center for Engineering Studies)
- 16:30 ..... **EG08: Imaging of Landslide Deposits around Uzungöl Lake (Trabzon-Turkey) by Refraction Tomography and MASW (S)\*\*** — G. V. Senkaya\* (Karadeniz Technical University), H. Karsli (Karadeniz Technical University), M. Senkaya (Karadeniz Technical University), R. Guney (Karadeniz Technical University)
- 16:50 ..... **EG09: Evaluating of The Visible Cracks and Related Damage in The Pavement Road (Maria Island Bridge-Abu Dhabi City) Utilizing Seismic Multi Analysis Surface Waves (MASW) and Ground Penetration Radar (GPR)** — M. Hassouneh\* (Tatweer)
- 17:10 ..... End of Day 1
- 18:30 ..... Visit to Al-Ain Palace Museum – Dinner

\* Presenter

(S)\*\* Student Paper

**Monday, 16 November 2015**

**UAE University | Crescent Building | Auditorium**

**ORAL SESSION**

07:30 .....Registration and Coffee

08:30 .....Welcome and HSE Moment

08:40 .....**FG01: Keynote Speech: Technology and Geoforensics**

Dr. Alastair Ruffell (Queen’s University)

**NEAR SURFACE GEOPHYSICS**

**Session I: Best of ICEEG**

R. Miller (Session Chair)

09:00 .....**EEG01: Recent Advances in High-Frequency Surface-Wave Methods** — J. Xia\* (The China University of Geosciences), L. Gao (The China University of Geosciences), Y. Pan (The China University of Geosciences), C. Shen (The China University of Geosciences)

09:20 .....**EEG02: Geophysical Data Fusions for Resolution Improvement** — G. Tian\* (Zhejiang University), S. A. Shaikh (Zhejiang University), A. Lizan (Zhejiang University), R. Chen (Zhejiang University), Y. Wang (Zhejiang University)

09:40 .....**EEG03: Comparison Tests for Surface Electromagnetic Prospecting System(SEP)** — Q. Di\* (Academy of Sciences, Beijing), Z. Wang (Academy of Sciences, Beijing), C.Fu (Academy of Sciences, Beijing), Z. An (Academy of Sciences, Beijing)

10:00 .....**EEG04: Characterization of Electrical Properties by Time Domain reflectometry** — C.P.Lin\* (National Chiao Tung University), C.H. Lin (National Chiao Tung University), C.C. Chung (National Chiao Tung University), H.C. Liu (National Chiao Tung University)

10:20 .....Coffee Break

10:35 .....**POSTER SESSIONS 1 (P1 – P10)**

**UAE University | Crescent Building | Great Hall**

**NEAR SURFACE GEOPHYSICS**

**Session II: Best of ICEEG**

K. Suto (Session Chair)

11:20 .....**EEG05: Applications of 3D Modeling and Inversion Technology in AMT Exploration with a Varied Topography** — S. Ruan \* (Chengdu University of Technology), W. Xuben (Chengdu University of Technology), Z. Jun (Chengdu University of Technology) and Y. Nian (Chengdu University of Technology)

- 11:40 ..... **EEG06: The Application of Non-Seismic Data in Near-Surface Velocity Modeling in Surface Volcanics Area** — Y. Zhanjun\* (BGP), F. Wenyan (China Southern Petroleum Exploration and Development Corporation), L. Dong (China Southern Petroleum Exploration and Development Corporation), J. Wenbo (BGP)
- 12:00 ..... **EEG07: GPR Signals Analysis of Post-tensioned Prestressed Concrete Girder Defects** — S. Liu\* (Jilin University) and L. Fu (Jilin University)
- 12:20 ..... **EEG08: CannyTEM – a high-resolution transient electromagnetic system based on mobile technology and artificial intelligence** — R. Chen\* (Central South University), X. He (Central South University), H. Yao (Champion Geophysical Technology), H. Wu (Champion Geophysical Technology), J. Qiu (Champion Geophysical Technology), R. Shen (Champion Geophysical Technology), Q. Ren (Champion Geophysical Technology), H. Shi (Champion Geophysical Technology), H. Dong (Champion Geophysical Technology), S. Tan, (Champion Geophysical Technology)
- 12:40 ..... **EEG09: Application of 2D Microtremor Survey Method to Detect and Map Beijing Tugou-Gaoliying Ground Fissure** — P. Xu\* (Key Laboratory of Shale Gas and Geoengineering, Institute of Geology and Geophysics, Chinese Academy of Sciences), Suqun Ling, (Geo-Analysis Institute Co. Ltd Japan)
- 13:00 ..... LUNCH

**ENGINEERING GEOPHYSIC**

**Session III: Advances in Multi-method Integration**

A. Mwafy (Session Chair)

- 14:10 ..... **EG10: Integration of Potential Geophysical Techniques and Seismic Method in the Geometric Characterization of a Dune Reservoir: Case of an Heterogeneous Substratum, the Zouaraa Basin (NW Tunisia) (S)\*\*** — M. Djebbi\* (Centre of Water Research and Technologies), H. Gabtni (Centre of Water Research and Technologies)
- 14:30 ..... **EG11: Integrated Geophysical Survey to Investigate a Construction Site in Makkah City, KSA** — F. Bahloul\* (DMT GmbH & Co.KG.) & D. Orłowsky (DMT GmbH & Co.KG.)
- 14:50 ..... **EG12: Innovative use of Engineering Geophysical for Site Investigations** — S. Rana\* (PARSAN Overseas Pvt. Limited)
- 15:10 ..... **EG13: Geothermal Resource Exploration in the Region of Hmeïma (Central -Western Tunisia) Using Resistivity Sounding and Gravity Data** — F.B. Mbarek\* (The National Office of Mines, Tunisia), W. Belkhiria (The National Office of Mines, Tunisia), M. Dhaoui (The National Office of Mines, Tunisia)
- 15:30 ..... Coffee Break

\* Presenter

(S)\*\* Student Paper

**ENGINEERING GEOPHYSICS**

**Session IV: Advances in Multi-method Integration**

H. El-Kaliouby (Session Chair)

- 15:50 ..... **EG14: Geophysical Application in Preselecting a High-Level Radioactive Waste Site** — Z. An\* (Chinese Academy of Sciences), Q. Di (Chinese Academy of Sciences), R. Wang (Chinese Academy of Sciences), C. Fu (Chinese Academy of Sciences)
- 16:10 ..... **P10: Characterization by Electrical Resistivity Imaging 3D and GPR of Dissolutions in Quaternary Carbonate Sandstone Formations in Algiers-West** — F. Khaldaoui (Laboratoire de Géophysique), Y. Djediat (University of Science and Technology Houari Boumediene), M. Djeddi (Laboratoire de Géophysique), A. Ydri (Laboratoire de Géophysique)
- 16:30 ..... **EG16: Geophysical Investigation of Groundwater Resources Integrating Seismic Refraction Tomography and Resistivity Data in Ibadan West, Nigeria (S)\*\*** — O. K. Abass\* (Chinese Academy of Sciences), M. Bello (University of Lagos)
- 16:50 ..... **EG17: Integrated Geotechnical and Engineering Geophysical Approach to Control Groundwater Influx: A Case Study from Abu Dhabi, UAE** — R. Jaradat\* (Gulf Laboratory for Site Investigation & Material Testing), Y. Al-Omari (Gulf Laboratory for Site Investigation & Material Testing), Anmar Abdulaziz (Spectra Geotechnologies and Foundations Contracting)
- 17:10 ..... End of Day 2
- 18:30 ..... Visit and Dinner at Sheikh Zayed Desert Learning Center

**Monday, 16 November 2015**

**UAE University | Crescent Building | Room D**

**ORAL SESSION**

**NEAR-SURFACE GEOPHYSICS**

**Session I: Near Surface Geophysics for Forensic Applications**

H. Baker (Session Chair)

- 11:20 ..... **FG02: A Collaborative Methodology for Ground Searches by a Forensic Geologist and Law Enforcement (Police) Officer: Detecting Evidence Related to Homicide, Terrorism and Organized Crime** — L. Donnelly\* (Worley Parsons), M. Harrison (Australian Federal Police and University of Canberra)
- 11:40 ..... **FG03: The application of Aspects of Forensic Ecology and the Use of Near-Surface Geophysics in a Search for Concealed Human Remains** — C. Hope\* (National Crime Agency, GB)
- 12:00 ..... **FG04: The UK Home Office (Centre for Applied Science & Technology):**

**Support to the Police Search Community Using Water Based Search Technology.** — M. Ferguson\* (UK Home Office, Centre for Applied Science and Technology, GB)

12:20 ..... **FG05: Soil in Search and Evidence in the Case of Missing Person Pamela Jackson** — L. Dawson\* (The James Hutton Institute), Ae. Sampson (Durham Constabulary), Ad. McConochie (Alecto Forensic Services Ltd), K. Harrison (Alecto Forensic Services Ltd), G. Mackinnon (Alecto Forensic Services Ltd), I. Jefferies (South Yorkshire Police), L. Donnelly (Worley Parsons)

13:00 .....LUNCH

## **NEAR SURFACE GEOPHYSICS**

### **Session II: Archaeo-geophysics**

L. Donnelly (Session Chair)

14:10 ..... **EG18 - Site Investigations Using Resistivity Tomography: Case Studies from Civil Engineering and Archeological Examples** — W. Belkhiria\* (The National Office of Mines, Tunisia), F.B. M'Barek (The National Office of Mines, Tunisia), M. Dhaoui (The National Office of Mines, Tunisia), W. Marzouki (The National Office of Mines, Tunisia)

14:30 ..... **EG19 - Improving Target Identification and Characterization From GPR Data Using Iso-surface Renders Technique** — M. Gaballah\* (National Research Institute of Astronomy and Geophysics and Majmaah University), D. Goodman (Geophysical Archaeometry Laboratory Inc.), M. Atya (National Research Institute of Astronomy and Geophysics), H.Salah (National Research Institute of Astronomy and Geophysics)

14:50 ..... **EG20: Exploring the Egyptian Alabaster at the Western Eocene Plateau of Assiut City, Egypt, Using Ground Penetrating Radar (S)\*\*** — R.H. Sayed\* (Assiut University), G.Z.A. Adl (Assiut University), M.O. Ibrahim (Assiut University), H.A. Soliman (Assiut University), A. A. Klochko (Lomonosov Moscow State University), D. Shishkov (Lomonosov Moscow State University)

15:30 .....Coffee Break

17:10 .....End of Day 2

18:30 .....Visit and Dinner at Sheikh Zayed Desert Learning Center

\* Presenter

(S)\*\* Student Paper

**Monday, 16 November 2015**

**UAE University | Crescent Building | Great Hall**

**Poster Presentation**

**POSTER SESSION I (P1 – P10)**

- 10:35 ..... **P01: Integration of 2D Resistivity and Seismic Profiling for Geotechnical Evaluation of Foundation Bedrock: A Case Study, El-Obour city, Egypt** (S)\*\* — A. Abd El-Raouf\* (Zagazig University), A. Samir (Zagazig University), K. Gemal (Zagazig University), A. El-Kenawy (Zagazig University)
- 10:40 ..... **P02: Landfill Characterization Using Geoelectrical Tools.** (S)\*\* — A. Abdulrahman\* (Universiti Sains Malaysia), M.N.M. Nawawi (Universiti Sains Malaysia) & R. Saad (Universiti Sains Malaysia)
- 10:45 ..... **P03: Assessment of Dynamic Characteristics of Contemporary Buildings Under Earthquake Loading** (S)\*\* — A. Ashri\* (UAE University) and A. Mwafy (UAE University)
- 10:50 ..... **P04: Neotectonic Evidences of Soummam Active Fault by Electrical Resistivity Tomography** — D. Machane (CGS, National Center of Applied Research in Earthquake Engineering), R. Bensalem (CGS, National Center of Applied Research in Earthquake Engineering)
- 10:55 ..... **P05: Geophysical and Seismological Investigation for Seismic Hazard in Nigeria and West African Region** (S)\*\* — K.U. Afegbua\* (Centre for Geodesy and Geodynamics & University of Benin) & F.O. Ezomo (University of Benin)
- 11:00 ..... **P06: Geodynamic Framework and Petroleum Potential of the Cap Bon – Gulf of Hammamet Province-Tunisia** — O. Abidi (University El Manar), M.H. Inoubli (University El Manar), A. Ben Salem LEM (Entreprise Tunisienne d'activités pétrolières), M. El Abed (Entreprise Tunisienne d'activités pétrolières), K. Sebei (University El Manar), H. Boussiga (University El Manar), A. Amiri (University El Manar)
- 11:05 ..... **P07: Results of Archaeo-Georadiolocation Investigations in the Old District of Tbilisi - The Capital of Georgia** — D. Odilavadze (Tbilisi State University), T. Chelidze (Tbilisi State University)
- 11:10 ..... **P08: Utilization of Isotopes in Hydrogeological Studies in UAE: A Review** — S. Parimalarenganayaki (UAE University), M.M. Mohamed (UAE University), A.A. Murad (UAE University)
- 11:15 ..... **P09: Mapping Flood Prone Areas in Ekpoma, Edo State, Nigeria Using Electromagnetic Profiling and Electrical Resistivity Soundings** — A. Isaac (Ambrose Alli University)



**Tuesday, 17 November 2015**

**UAE University | Crescent Building | Auditorium**

**ORAL SESSION**

07:30 .....Registration and Coffee

08:30 .....Welcome and HSE Moment

08:40 ..... **EG21: Keynote Speech: Applications of Engineering Seismology in Urban Areas**

Prof. Öz Yilmaz (Anatolian Geophysical)

**ENGINEERING GEOPHYSICS AND NATURAL HAZARDS  
Session I: Environmental Geophysics Applications and Natural Hazards**

J. Xia (Session Chair)

09:00 ..... **EG22: Hazard Assessment and Site Characterization at an Oil and Gas Well Site Using Surface Wave Methods** — S.D. Sloan\* (XRI Geophysics), J.T. Schwenk (XRI Geophysics), R.H. Stevens (XRI Geophysics) and B.W. Butler (XRI Geophysics)

09:20 ..... **EG23: Probabilistic Vulnerability Assessment of the Building Inventory in an Extended Seismically Active Area in the UAE** — A. Mwafy\* (UAE University), A. Ashri (UAE University) and A. Issa (UAE University)

09:40 ..... **EG24: GPR Study of Karst in a Carbonate Coastal Area for Evaluating its Suitability for Construction, Wadi Shab, Eastern Oman** — H. El-Kaliouby\* (Sultan Qaboos University)

10:00 ..... **EG25: Geophysical Study of the Mechanism of Sinkhole Formation in North-east Algeria** — M. Djeddi\* (Laboratoire de Géophysique), F. Khaldouï (Laboratoire de Géophysique), Y. Djediat (University of Science and Technology Houari Boumediene), A. Ydri (Laboratoire de Géophysique)

10:20 .....Coffee Break

**ORAL SESSION — AUDITORIUM**  
(CONCURRENT SESSION)

**POSTERS — GREAT HALL**  
(CONCURRENT SESSION)

\* Presenter

(S) \*\* Student Paper

10:30 ..... **POSTER SESSIONS II (P11 – P20)**  
**UAE University | Crescent Building | Great Hall**

**ENGINEERING GEOPHYSICS AND NATURAL HAZARDS**  
**Session II: Environmental Geophysics Applications and Natural Hazards**

*K. Al-Bloushi (Session Chair)*

- 11:30 ..... **EG26: Strong Motion Source Model for the 2003 Boumerdes, Algeria, Earthquake (S)\*\*** — F. Gherboudj\* (CGS, National Center of Applied Research in Earthquake Engineering), H. Miyake (University of Tokyo), T. Yokoi (International Institute of Seismology and Earthquake Engineering), N. Laouami (CGS, National Center of Applied Research in Earthquake Engineering)
- 11:50 ..... **EG27: Water Level Variations and Earthquakes in the Lake Van Area, Eastern Turkey** — M. Utkucu\* (Sakarya University), H. Arman (UAE University)
- 12:10 ..... **EG28: Detection of Subsurface Karstic Features Using Electrical Resistivity Tomography, Case Study, Al Ain, United Arab Emirates** — T.U.R. Sabir\* (Arab Center for Engineering Studies), M.K. Harb (Arab Center for Engineering Studies), E. Sharif (Arab Center for Engineering Studies), M.J. Ahmed (Arab Center for Engineering Studies)
- 12:30 ..... **EG29: Seismic Scenario-Structure-Based Performance Criteria for RC High-rise Wall Buildings (S)\*\*** — W. Alwaeli\* (The University of Sheffield), A. Mwafy (UAE University), K. Pilakoutas (The University of Sheffield), M. Guadagnini (The University of Sheffield)
- 12:50 ..... LUNCH

**ENGINEERING GEOPHYSICS**  
**Session V: Application for the Energy Industry**

*I. Haggag (Session Chair)*

- 14:00 ..... **EG30: Recent Technologies For Near-surface Imaging in the Arabian Peninsula** — A. Vesnaver\* (Petroleum Institute), Y. Bouzidi (Petroleum Institute), L. Hou (Petroleum Institute)
- 14:20 ..... **EG31: Impacts of Hydraulic Fracturing on the Environment and on Human Health** — M. Djeddi\* (University of Science and Technology Houari Boumediene)
- 14:40 ..... **EG32: Geotechnical Investigation of Namar Dam Site Using Geophysical Tools, Riyadh area, Saudi Arabia (S)\*\*** — A.H. Alhaj\* (King Saud University), H.Al-Mudhi (King Saud University)
- 15:00 ..... **EG33: Workflows for Characterization of Shale Gas Reservoir. (S)\*\*** — A.K.A. Siddique\* (NED University of Engineering & Technology)
- 15:20 ..... Coffee Break

**ENGINEERING GEOLOGY FROM GEOPHYSICS**

**Session I: Ground Stability, Material Properties, Site Response, Coastal/Sedimentation, Stratigraphy, etc.**

M. Djeddi (Session Chair)

- 15:40 ..... **EG34: Engineering Geophysics: Human Activities and Humanitarian Applications** — K. Suto\* (Terra Australis Geophysica Pty, Ltd)
- 16:00 ..... **EG35: A Case Study to Detect the Extent of a Carbonate Outcrop in the Subsurface Using Microgravity** — Y. Bouzidi\* (Petroleum Institute)
- 16:20 ..... **EG36: Gypsiferous Bedrocks and Soils of Abu Dhabi and Their Implications for Engineering Geozoning** — O. Abdelghany\* (UAE University), M. Abu Saima (UAE University), H. Arman (UAE University), A. Fowler (UAE University)
- 16:40 ..... **EG37: The 25 April 2012 Beni Haoua Earthquake: Instrumental Intensity and Consistency of Ground Motion Modeling (S)\*\*** — K. Abbas\* (CGS, National Center of Applied Research in Earthquake Engineering), N. Benkaci (CGS, National Center of Applied Research in Earthquake Engineering), A. Slimani (CGS, National Center of Applied Research in Earthquake Engineering), F. Gherboudj (CGS, National Center of Applied Research in Earthquake Engineering), M.Djeddi (University of Science and Technology Houari Boumediene)
- 15:00 ..... **EG38: Geoelectrical Measurements as a Proxy for the Biophysicochemical Properties of Soils Irrigated with Sewage Water at Assiut City, Egypt (S)\*\*** — R.S. Abd El-Rhman\* (Assiut University), G.Z. AbdelAal (Assiut University), M. El-Ameen (Al-Azhar University), A. Faragallah (Al-Azhar University), Mohamed H. Abdullah ( Assiut University)
- 17:20 ..... End of Day 3
- 18:30 ..... Award Ceremony and Gala Dinner at Hazza Bin Zayed Stadium

**Tuesday, 17 November 2015**

**UAE University | Crescent Building | Room D**

**ORAL SESSION**

**ENGINEERING GEOPHYSICS**

**Session VI: New Approaches and Data Processing**

M. Djeddi (Session Chair)

- 11:30 ..... **EG39: Can High-Resolution Marine Geophysical Data Provide Quantitative Information Useful for Engineering Design?** — M.E. Vardy\* (Marine Geoscience Group, National Oceanography Centre)

\* Presenter

(S)\*\* Student Paper

- 11:50 ..... **EG40: Gravity Interpretation Using Multi-scale Analysis in the Algiers Area (Algeria)** — L. Benhenni\* (USTHB), Z. Benaissa (USTHB) , S. Samai (USTHB), M. Djeddi (USTHB) H. Boukerbout (Centre de Recherche en Astronomie Astrophysique et Géophysique), A. Boudella (Centre de Recherche en Astronomie Astrophysique et Géophysique)
- 12:10 ..... **EG41: Comparison of Dispersion Curves from Horizontal and Vertical Components of Particle Motion** — Z. Khan\* (American University of Sharjah), M. El-Emam (American University of Sharjah), M. Attom (American University of Sharjah), A. Ahmed (American University of Sharjah)
- 12:30 ..... **EG42: An Improved Iteration of Density Interface Inversion** — C. Zhang\* (Jilin University)
- 12:50 ..... LUNCH

## **NEAR SURFACE GEOPHYSICS**

### **Session III: Gravity**

J. Xia (Session Chair)

- 14:00 ..... **EG43: Regional – Residual Gravity Anomaly Separation – A New Processing Technique.** (S)\*\* — S. Barala\* (Indian School of Mines), N. L. Mohan (Osmania University), R. R. Mathur (Osmania University)
- 14:20 ..... **EG44: Understanding Salt Tectonics in Northern Tunisia – Insight From Gravity Data Analysis** — I.H. Nasr\* (Faculty of Science of Tunisia & Faculty of Science of Bizerte), K. Sebei (Faculty of Science of Tunisia) H. Boussigua (Faculty of Science of Tunisia), B. Sarsar (Faculty of Science of Tunisia), A. Adnen (Faculty of Science of Tunisia), O. Abidi (Faculty of Science of Tunisia), M. Brahmi (Faculty of Science of Tunisia), S. Tlig (Faculty of Science of Tunisia), I.M. Hedi (Faculty of Science of Tunisia)
- 14:40 ..... **EG45: Determination of Near-Surface Average Density Using Fractal Approach for a Gravity Data Set Reduction – A Case Study From North of Iran** — R.A. Kalantari\* (Institute of Geophysics, University of Tehran), A. Eshaghzadeh (Institute of Geophysics, University of Tehran)
- 15:00 ..... **EG46: Gravity Data Interpretation for Structure Studies at a Coastal Area, South West Saudi Arabia** — E. Elawadi\* (King Saud University), A. Sulaiman (King Abdulaziz City for Science and Technology), S. Mogren (King Saud University)
- 15:20 ..... Coffee Break
- 17:20 ..... End of Day 3
- 18:30 ..... Award Ceremony and Gala Dinner at Hazza Bin Zayed Stadium

**Tuesday, 17 November 2015**

**UAE University | Crescent Building | Great Hall**

**POSTER SESSION II (P11 – P20)**

- 10:35 ..... **P11: Natural Radioactivity of Carbonate Rocks as Materials for Construction and Cement Industry** — D. Alshamsia (UAE University), A. Murad (UAE University), A. Aldahan (UAE University), X. L. Hou (Technical University of Denmark & Xi'an AMS centre and SKLLQG Institute of Earth Environment)
- 10:40 ..... **P12: Electromagnetic Methods for the Prediction of the Earth's Surface Failures on the Territory of the Flooded Salt Mines (S)\*\*** — T. Laskina\* (Perm State National Research University)
- 10:45 ..... **P13: Evaluation and Treatment of the Swelling Behaviour of Expansive Soil Derived from Enugu Shale, South Eastern Nigeria (S)\*\*** — O. Ozotta\* (Federal University of Technology Owerri), O. Okeke (Federal University of Technology Owerri)
- 10:50 ..... **P14: Importance of Sampling and Sample Preparation in Slake Durability Test** — A.A.O. Alali\* (UAE University), Nader Al-Hakimi (UAE University)
- 10:55 ..... **P15: Has Diving Wave Tomography Impeded the Advancement of Near Surface Refraction Seismology?** — D. Palmer\* (The University of New South Wales)
- 11:00 ..... **P16: Time Reversal Modelling Approach in Simple Synthetic Data Model for Underground Collapse Mining Evacuation (S)\*\*** — L. Ode Marzujriban\* (Hasanuddin University), S. Aswad (Hasanuddin University)
- 11:05 ..... **P18: The Integrated Application of Natural Radon-Radioactivity and Electrical Resistivity Tomography to Investigate Karst Cave System: A Case Study from Al-Dahr Cave, N-Jordan** — R.Jaradat\* (Yarmouk University and Gulf Laboratory for Site Investigation and Material Testing), E. Na'amneh (Yarmouk University), B. Al-Bataina (Yarmouk University)
- 11:10 ..... **P19: Integrated Gravity and Seismic Investigations for 3D Modeling of Deep Aquifers: Sidi Bouzid Multilayer Aquifer (Central Tunisia) (S)\*\*** — A.K. Olawuyi\* (University of Ilorin), B.D. Ako (Federal University of Technology), G.O. Omosuyi (Federal University of Technology) and A.O. Adelusi (Federal University of Technology)
- 11:15 ..... **P20: Integration of Electrical Resistivity and Ground Penetrating Radar Methods in Engineering Site Characterization: A Case Study Around Ajibode Ibadan Southwestern Nigeria (S)\*\*** — A.O. Adelekan\* (University of Ibadan), M.A. Oladunjoye (University of Ibadan)

\* Presenter

(S)\*\* Student Paper

**Wednesday, 18 November 2015**

**UAE University | Crescent Building | Auditorium**

**ORAL SESSION**

07:30 .....Registration and Coffee

08:30 .....Welcome and HSE Moment

08:40 .....**EG47 Keynote Speech: Near-Surface Geophysics — Defining What, Why and How?**

Dr. Peter Annan (Sensors & Software Inc.)

**HYDRO-GEOPHYSICS**

**Session I: Groundwater and Shallow Water Structures and Characterization**

K. Al-Bloushi (Session Chair)

09:00 .....**EG48: Seismic Reflection for Near Surface Characterization of Earthen Dams and Dikes: Upstream, Downstream, ON** — R.D. Miller\* (University of Kansas), R.D. Markiewicz (U.S. Bureau of Reclamation), J. Ivanov (University of Kansas), S. Peterie (University of Kansas), J. Xia (China University of Geosciences)

09:20 .....**EG49: Geophysical and Hydrogeological Investigations of the Groundwater Conditions at a Pilot Area Between Jabal Hafit and Oman Border, Al Ain, UAE** — A. Murad\* (UAE University), S. Hussein (UAE University), A. Gabr (UAE University), H. Baker (UAE University), K. Al Bloushi (UAE University), A. Aldahan (UAE University)

09:40 .....**EG50: Estimating Aquifer Hydraulic Parameters from Electrical Resistivity Measurements; A Case Study at Khuff Formation Aquifer, Al Quwy'ya Area, Central of Saudi Arabia** — M. Metwaly\* (King Saud University), M. El Alfy (King Saud University), E. Eawad (King Saud University), A. Ismail (National Research Institute of Astronomy and Geophysics), G. El-Qady (National Research Institute of Astronomy and Geophysics)

10:00 .....**EG51: Groundwater Exploration Using Airborne Electromagnetic Data** — C. Annison\* (CGG Multiphysics), S. Wetherley (CGG Multiphysics)

10:20 .....Coffee Break

10:40 .....**POSTER SESSIONS III (P21 – P30)**  
**UAE University | Crescent Building | Auditorium**

**HYDRO-GEOPHYSICS**

**Session II: Groundwater and Shallow Water Structures and Characterization**

S.Sloan (Session Chair)

11:30 .....**EG52: Mapping Coastal Aquifer and Sea Water Intrusion Using Time-Domain Electromagnetic Method, North Oman** — H. El-Kaliouby\* (Sultan Qaboos University)

- 11:50 ..... **EG53: Geophysical Prospecting of Groundwater in Carbonate Discontinuous Aquifer in Morocco** — M. Rouai\* (Moulay Ismail University), K. Qarqori (Moulay Ismail University)
- 12:10 ..... **EG54: Hydrogeophysical Study for the Groundwater Flooding in Al-Borgeig Area, Northern Sudan** — M.A. Mohamed-Ali\* (University of Dongola), E.A. Hassan (University of Dongola), A.I. Ali (University of Dongola)
- 12:30 ..... **EG55: Imaging the Saline/Fresh Water Interface at Bafra, Samsun, Turkey Using Joint Inversion of Seismic Refraction and Direct Current Electricity Data** — H. Hamdan\* (Arab Center for Engineering Studies), E. Candansayar (Ankara University), I. Demirci (Ankara University), N. Economou (Technical University of Crete), N. Andronikidis (Technical University of Crete), H. Arslan (Ondokuz Mayıs University), P. Soupios (Technological Educational Institute of Crete), A. Vafidis (Technical University of Crete)
- 12:50 ..... **EG56: Impact of Sea Level Rise on the Relationship Between Electrical Resistivity and Groundwater Salinity: A Case Study in the North of El Sharkia Area, Eastern Nile Delta, Egypt** — M. Attwa\* (Zagazig University), K. Gmail (Zagazig University), A. Talal (Zagazig University)
- 13:10 ..... LUNCH

## BAROMETERS OF GEOPHYSICS METHODS

### Session I: State of the Practice, State of the Art; Thinking Outside the 'Box'; Tool Development

P. Annan (Session Chair)

- 14:20 ..... **P17: Effect of Flood Analysis on the Foundation Investigation Using Integrated Approach** — L. Adeoti\* (University of Lagos), S. Oduuga (University of Lagos), R.B.Adegbola (University of Lagos), S. Oladele (University of Lagos), S. Adekunle Raji (University of Lagos)
- 14:40 ..... **EG58: Uncoupled Mass Geophone, "UMG"** — I. Gwerah\* (Waha Oil Company)
- 15:00 ..... **EG59: Airborne Geophysics Applied to Engineering and Environmental Problems** — G. Hodges\* (CGG MultiPhysics), C. Annison, (CGG MultiPhysics)
- 15:20 ..... **EG60: Sensing the Presence and Transport of Engineered Nanoparticles in Saturated Porous Media Using Spectral Induced Polarization (SIP) Method** — G.Z. Abdel Aal\* (Oklahoma State University & Assiut University), E.E. Atekwana (Oklahoma State University), D. Werkema Jr (U.S. Environmental Protection Agency)
- 16:00 ..... Coffee Break
- 17:00 ..... End of Day 4
- 15:00 ..... CLOSING

\* Presenter

(S)\*\* Student Paper

**Wednesday, 18 November 2015**  
**UAE University | Crescent Building | Great Hall**  
**POSTER SESSION III (P21 – P30)**

- 10:40 ..... **P21: Defining Proper Safety Distances Through Evaluation of the Actual Impact on Environment Produced by a Seismic Charge Detonation Using Audio Magnetotelluric method** **D. Vidal\*** (YPFB-Andina S.A.), G. Barreto (PDVSA Servicios), N. Escorihuela (PDVSA Exploración), J. Sulbaran (PDVSA Exploración)
- 10:45 ..... **P22: Geochemical Behavior of Elements of Marine Sediments of Abu Dhabi Area, United Arab Emirates** — M. El Tokhi\* (UAE University), B. M. Amin (UAE University), S. Alaabed (UAE University)
- 10:50 ..... **P23: Subsurface Geologic Structures Investigation using Magnetic Method at Dibba area, United Arab Emirates** — A. Gabr\* (UAE University), S. Darwish (UAE University), S. Khosravi (UAE University), R. Al Buraiki (UAE University)
- 10:55 ..... **P24: The Application of a Blend of UK Police Service Assets in a Specialist Search** — G. Peffers\* (College of Policing, GB)
- 11:00 ..... **P25: Subsurface Structure and The Effect on Flexible Pavement Performance: The Shagamu-Benin Expressway, Southwestern Nigeria, As Case Study** — T. Fatoba\* (Olabisi Onabanjo University), M. O. Olorunfemi (Obafemi Awolowo University), A.B. Eluwole (Ekiti State University)
- 11:05 ..... **P26: Gravity for Hydrocarbon Exploration Promotion** — M.H. Inoubli\* (University of Tunis-El Manar and Geoplus Sarl), I. Hamdi (University of Tunis-El Manar & Geoplus Sarl), O. Abidi (University of Tunis-El Manar and Geoplus Sarl), A. Amiri (University of Tunis-El Manar and Geoplus Sarl)
- 11:10 ..... **P27: 4D Seismic over 3D** — N. Shukla\* (Banaras Hindu University)
- 11:15 ..... **P28: Meteorological Conditions Influence on Quantification of Site Effects at Low Frequency Using the Seismic Ambient Noise (S)\*\*** — R. Bensalem\* (CGS, National Center of Applied Research in Earthquake Engineering), D. Machane (CGS, National Center of Applied Research in Earthquake Engineering), J.L. Chatelain (IRD, ISTERre & UJF), M. Djeddi (University of Science and Technology Houari Boumediene), H. Moulouel (CGS, National Center of Applied Research in Earthquake Engineering), E.H. Oubaiche (CGS, National Center of Applied Research in Earthquake Engineering), M. Hellel (University of Science and Technology Houari Boumediene)
- 11:20 ..... **P29: Application of Time-Domain Electromagnetic Method in Mapping Sea Water Intrusion in Al-Batinah Coastal Plain, Al Batinah, Sultant of Oman; i (1) P (S)\*\*** — H. Al Salmi\* (Sultan Qaboos University), H. El-Kaliouby (Sultan Qaboos University)



11:25 ..... **P30: Preliminary Test Investigation to Compare the Vertical Resolution of Different Geophones for Near Surface Shallow Seismic Investigation of an Abandoned Coal Mine Site.** (S)\*\* — A.I. Isiaka\* (University of the Witwatersrand), R.J. Durrheim (University of the Witwatersrand), M.S.D. Manzi (University of the Witwatersrand)

\* *Presenter*

(S)\*\* *Student Paper*

## Featured Keynote Speakers



**John Bradford** (Boise State University, SEG President, 2015–16) presenting *Adapting the Oil Exploration Model to Contaminated Site Characterization: A Cost Benefit Perspective*. Bradford is a recognized expert in numerical analysis of seismic and GPR for contaminant transport and hydrological processes.



**Öz Yilmaz** (Anatolian Geophysical) presenting *Applications of Engineering Seismology in Urban Areas*. Yilmaz is one of the most recognized names in exploration seismology and he continues to actively developing innovative seismic methods and approaches for application to a wide and fascinating range of engineering problems.



**Peter Annan** (Sensors & Software) presenting *Near-Surface Geophysics – Defining What, Why and How?* Annan is a pioneer in Ground Penetrating Radar, and one of the most globally respected innovators in near surface geophysics having developed many of the GPR instruments and techniques in common use today. He is also the founder of several companies' promoting/providing geophysical services and equipment.



**Alastair Ruffell** (Queens University Belfast) presenting *Technology and Geoforensics*. Ruffell is a world renowned geoforensics expert in the application of geophysical technologies for locating and identifying buried bodies and underwater objects. He is a recognized trace evidence specialist with hundreds of courtroom appearances as an authority in geoforensic technologies.



## **Women in Geosciences Panel**

For the first time, a Women in Geoscience (WIG) Panel will be held during the opening ceremony at the ICEG on 15 November 2015, enhancing the full and robust technical program of this conference.

For the female workforce tackling issues such as salary parity conditions, STEM career promotion, and retention strategies are increasingly important. The WIG Panel will allow delegates to experience first-hand, the benefits of women with broad-based, diverse, and effective leadership skills. The panel will discuss/construct future paths, current and desired workforce perceptions, and focus on achievable successes a broader, female leadership can provide.

The Panelists invited are top female figures, that are recognized role-models in the Middle East Geosciences realm, they will share their experience, information and reflections about the participation of women in Geology, Geophysics, Petrophysics, Geochemistry, soil sciences, and all other disciplines embedded in Geosciences from their own experience point of view. Panel coordinated by **Ms. Maria Capello**, WNC Chair.

### **Panelists include:**

**Dr. Shaikha Al Maskari** | Al Maskari Holdings, Chairman

**Aseel Humoodi** | ADCO, Vice President Talent and Capability Management

**Dr. Sandra Vega** | Petroleum Institute, Researcher and Professor

**Prof. Lorna Dawson** | The James Hutton Institute, Head of Forensic Soil Science, Senior Principal Research Scientist



### **H.E Dr. Shaikha Al Maskari**

Dr. Shaikha Al Maskari is the Chairperson of Al Maskari Holding, AMH, and of Tricon Group. Shaikha is also Chairperson of Johnson Controls & Global Communications, JCGC. She began her career with ADNOC Group. In 1989 she took charge of her family company, Tricon Energy Operations, grew it to become Tricon Group with companies in the UAE, GCC, USA, Europe, Turkey and Singapore. In 2008, Shaikha established Al Maskari Holding, AMH, an umbrella organization for all her family companies, divested non-core subsidiaries, merged synergetic portfolios, and focused investments on oil, gas, and power generation focusing on renewable energy and mining. Shaikha founded the Global Institute of Justice & Technology and the Global Paramedic & Rescue Academy which have trained hundreds of UAE Ministry of Interior personnel in advanced Police Sciences, security and emergency services. Shaikha set up her family charity, United Mercy Foundation (presently operated under AMH) which sponsors orphans, provides food, medical and emergency relief in the ME, Africa and Asia. In 2006 she co-founded the Diyar Bakir Micro-credit project in Turkey, which has since launched over 38,000 entrepreneurs. In 2010, Shaikha formed "Global Social Empowerment Alliance, GSEA", to drive transformation of family/social mind sets to raise children on C4 (Confidence, Conscience, Compassion and Collaboration) for human sustainability through good global citizenship (with cross-ethnic, cross-cultural and interfaith harmonious co-existence).



### **Aseel N. Hamoodi**

Vice President of Talent and Capability Management in the Abu Dhabi Company for Onshore Oil Operations (ADCO). A 29 year career journey spanning across various functions within ADCO including responsibilities for the company's Facilities Management, Corporate IT Strategy, Organization Development and Business Support covering a portfolio of Corporate Planning, Performance Management and Workforce Planning. Her current role focuses on developing and building the pipeline of technical and leadership capability for the company. Qualifications include a Bachelor degree from the University of Michigan's School of Art and Architecture, a Master Certificate in Project Management and a Diploma in Executive Development from the Institute of Management Development (IMD) in Switzerland.



### **Sandra Vega**

Sandra Vega is a rock physicist experienced in acoustic lab measurements, seismic-logs-lab data correlation, carbonate fluid substitution, and Digital Rock Physics (DRP). Physicist of profession, she started her career in Geosciences (1990) working as Field Assistant Seismologist in acquisition of 2D seismic for Sismoven-Halliburton, Venezuela. Then, she worked as research petrophysicist from 1991 to 1998 in the research and

development institute of Intevep-PDVSA. After that, Dr. Vega went back to school and got her master and PhD in Stanford University, USA. After earning her PhD in Geophysics (December 2003), she joined the CSL group in University of Miami, working as a postdoctoral fellow, where she studied the correlation between rock physics and GPR measurements. In August 2005, she joined the Petroleum Geosciences Department at The Petroleum Institute (PI) in Abu Dhabi, UAE, where she is still working as Assistant Professor. She has taught courses of Petrophysics, Data Analysis and Geostatistics, Reflection Seismology, Geosciences-Computer Project, Introduction to Geosciences, and Rock Physics. Dr. Vega has also supervised several senior projects, and undergraduate and graduate research in the areas of rock physics, petrophysics, reservoir characterization, and geomechanics. She has been the leader and principal investigator of important projects that study rock physics in carbonates in the Middle East, including new rock physics models, DRP (Digital Rock Physics) and RPT (Rock Physics Templates). Dr. Vega has been the leader and driven force to build the first Rock Physics Lab in UAE at the PI. She has also international and local collaboration in various carbonate studies, such as the effect of fluid flow on elastic properties, textural heterogeneity, fluid substitution, seismic attenuation, and corals.



### **Lorna Dawson**

Lorna Dawson is a Principal Soil Scientist in the Environmental and Biochemical Sciences group at the James Hutton Institute, and has over 25 years' experience in managing and conducting research in soil and plant interactions. Lorna is Head of the Soil Forensics Group at the Hutton Institute, honorary professor in Forensic Science at Robert Gordon University, and is seconded to manage and advise on the Environmental Change program within the Scottish Government's (RESAS) strategic research, where she reports to the Directors' Executive Committee to ensure effective delivery of the Scottish Government's Strategic Research Program. She has published widely, and regularly presents at national and international conferences. She is affiliated to Aberdeen and Robert Gordon Universities in Aberdeen, contributing to the Archaeology, Soils, Environment and Forensic Science lecture courses, and is an external examiner at Strathclyde University. She has supervised over 20 PhD projects and has published over 70 refereed journal papers, books and book chapters. She is an editor for journals ISRN Soil Science and Elsevier, Materials Research Bulletin. Lorna developed the application of soil organo-mineral markers in forensic investigations and was Principal Investigator on a project funded by the EPSRC, developing tools for soil characterization in forensics. She is treasurer of an international Geoforensics network (IUGS Initiative on Forensic Geology-IFG). She is a member of the ENFSI (European Network of Forensic Science Institutes) Animals, Plants, Soils Traces (APST) working group and a member of the Technical Committee of the University of Messina, Rome, teaching on the Masters in Forensic Geology course. She coordinated sessions at the International Crime Science Meetings, London, 2007-2009 and organized major conferences on environmental and criminal soil forensics in 2007 and 2010, and the International Network of Environmental Forensics and has co-organized major international conferences in 2007 (Edinburgh), 2010 (California) and in 2012 (The Hague).



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