

DAY 1: TUESDAY 27 JUNE

Registration 🕒 0830

Introduction and welcome from the Conference Chairman 🕒 0900
Romina Gehrmann, Research Fellow, University of Southampton, UK

Plenary Session

CHAIR: Romina Gehrmann, Research Fellow, University of Southampton, UK

KEYNOTE: Marine electromagnetic methods in exploration geophysics 🕒 0915
Lucy MacGregor, Chief Scientific Officer, Rock Solid Images, USA

KEYNOTE: An introduction to maritime electromagnetic signatures and sensing 🕒 0945
Geoff Garnett, Technical Fellow, Platform Systems, Dstl, UK

KEYNOTE: Exploration of the oceans using electromagnetic methods - from telegraphs to interstellar applications 🕒 1015
Peter Sigray, Research Director, Swedish Defence Research Agency, FOI, Sweden

Poster Highlights – Two minute overviews by the poster presenters 🕒 1045

Coffee break for visiting exhibitors and posters 🕒 1100

Electromagnetic Surveillance and Communication Systems

CHAIR: Brad Nelson, President, Aeromagnetic Solutions Inc, Canada

Electromagnetic noise model extended to high geomagnetic activity and coastal areas 🕒 1145
Lisa Rosenqvist, Scientist, Swedish Defence Research Agency, FOI, Sweden

Electric field sensing for airborne magnetic noise mitigation 🕒 1210
Gregory Schultz, Chief Technology Officer, White River Technologies, USA

Lunch Break 🕒 1235

Seafloor and Sub-Bottom Electromagnetic Exploration

CHAIR: Romina Gehrmann, Research Fellow, University of Southampton, UK

The next generation CSEM acquisition system 🕒 1350
Peter Hanssen, Lead Geophysicist, Statoil ASA, Norway

Large-scale 3D anisotropic inversion of towed streamer EM data using the Gauss-Newton method 🕒 1415
Johan Mattsson, R&D Manager, PGS, Sweden

A new type of marine Controlled-Source Electromagnetic transmitter and receivers 🕒 1440
Prof Yuguo Li, Key Laboratory of Submarine Geosciences and Prospecting Techniques, Ministry of Education, Ocean University of China

Marine electromagnetic instrument development and experiments in the South China Sea 🕒 1505
Ya Xu, Associate Professor, Institute of Geology and Geophysics, Chinese Academy of Sciences, China

Coffee break for visiting Exhibitors and Posters 🕒 1530

Vessel Electromagnetic Signature Prediction and Control

CHAIR: Owen Griffiths, Principal Engineer, Maritime Integrated Survivability, Dstl, UK

Assessment and optimisation of field homogeneity in de-perm facilities 🕒 1615
Christopher Riley, Engineering Manager, Cobham Technical Services, UK

Decomposition of ferromagnetic signature with respect to induced and permanent magnetisation 🕒 1640
Jan-Ove Hall, Senior Scientist, Swedish Defence Research Agency, FOI, Sweden

DRINKS RECEPTION Victoria Gallery & Museum, Ashton Street, Liverpool, 5.30 – 7.00pm 🕒 1730

DAY 2: WEDNESDAY 28 JUNE

Morning refreshments

🕒 0830

Electromagnetic Surveillance and Communication Systems

CHAIR: Greg Schultz, Chief Technology Officer, White River Technologies, USA

Results from an underwater electromagnetic communication trial using QPSK waveforms
 Tom Braute, Senior Scientist, Norwegian Defence Research Establishment (FFI), Norway

🕒 0900

Underwater to Air Magnetic communication link budget
 Boris Ginzburg, Senior Researcher, NRC Soreq, Israel

🕒 0925

Range extension for electromagnetic detection of power and telecommunication cables
 Tomasz Szyrowski, Academic, Plymouth University, UK

🕒 0950

Poster Highlights – Two minute overviews by the poster presenters

🕒 1015

Coffee break for visiting exhibitors and posters

🕒 1030

Vessel Electromagnetic Signature Prediction and Control

CHAIR: Alastair Ballentine, Product Manager Submarine Systems, Atlas Elektronik, UK

Magnetic signature identification using pareto optimisation
 Christopher Riley, Engineering Manager, Cobham Technical Services, UK

🕒 1115

Demonstration of the TNO magnetic signature design tool
 Eugene Lepelaars, Researcher, TNO, Netherlands

🕒 1140

Magnetic signature prediction tool
 Simon Topping, Head of CS Signatures Department, Atlas Elektronik, UK

🕒 1205

Lunch Break

🕒 1230

Oceanographic Electromagnetics

CHAIR: Neil Stapleton, Principal Scientist, Dstl, UK

Validation of models of EM fields induced by ocean swell using bottom mounted sensor systems
 Brian Glover, Physicist, Naval Surface Warfare Center, Carderock Division, USA

🕒 1345

Characterisation of subsea electromagnetic fields using an AUV
 Manhar Dhanak, Professor & Director, Florida Atlantic University, USA

🕒 1410

Magnetic field variations induced by submesoscale processes in the shallow water ocean environment
 Alexander Soloviev, Professor, Nova Southeastern University, USA

🕒 1435

Coffee break for visiting Exhibitors and Posters

🕒 1500

Electromagnetic Surveillance and Communication Systems

CHAIR: Owen Griffiths, Principal Engineer, Maritime Integrated Survivability, Dstl, UK

Sensor body shape effects on electric field measurements
 Carmen Lucas, Defence Scientist, DRDC Atlantic Research Centre, Canada

🕒 1545

Simulating the bias of high conducting system components on the sensitivity of marine FDEM sensors
 Konstantin Reeck, PhD Student, University of Bremen, Germany

🕒 1610

Electric field buoy measurements
 Samantha Davidson, Capability Manager - Signatures, Ultra Electronics, UK

🕒 1635

CONFERENCE DINNER The White Star Grand Hall, 30 James Street Hotel, 6pm onwards

🕒 1800

DAY 3: THURSDAY 29 JUNE

Morning refreshments

🕒 0830

Seafloor & Sub-Bottom Electromagnetic Exploration

CHAIR: Johan Mattsson, EM R&D Manager, PGS, Sweden

Massive sulphide exploration with Controlled Source Electromagnetics at the Mid-Atlantic Ridge
Romina Gehrmann, Research Fellow, University of Southampton, UK

🕒 0900

Low Frequency Near-Shore EM Propagation for Shallow Water Applications
David Calvo, Research Engineer / Section Head, U.S. Naval Research Laboratory, USA

🕒 0925

Mapping seafloor ore deposits in the Tyrhennian Sea with a new time-domain coincident coil system
Sebastian Hölz, Senior Researcher, GEOMAR - Helmholtz Center for Ocean Research Kiel, Germany

🕒 0950

Poster Highlights – Two minute overviews by the poster presenters

🕒 1015

Coffee break for visiting exhibitors and posters

🕒 1030

Electromagnetic Surveillance & Communication Systems

CHAIR: Brian Glover, Physicist, Naval Surface Warfare Center, USA

Geomagnetic modelling for MAD detection
George LeBlanc, Research Officer, National Research Council of Canada, Canada

🕒 1115

Integrated techniques for predicting and assessing UAV-based Magnetic Anomaly Detection
Joe Keranen, Senior Scientist, White River Technologies, USA

🕒 1140

Investigating MAD aircraft compensation techniques to inform high precision UAV compensation
Harriet McGrain, Hydrodynamic Scientist, Dstl, UK

🕒 1205

Lunch Break

🕒 1230

Oceanographic Electromagnetics

CHAIR: Neil Stapleton, Principal Scientist, Dstl, UK

Anthropogenic electromagnetic fields and impact on marine organisms
Andrew B Gill PhD, Director, Cape Eleuthera Institute, Bahamas

🕒 1345

Magnetic signature of diel vertical migrations of zooplankton
Cayla Dean, PhD Candidate, Nova Southeastern University, USA

🕒 1410

Infrared sensing of surface scars
Aidan Burt, Scientist, Atlas Elektronik, UK

🕒 1435

Coffee break for visiting Exhibitors and Posters

🕒 1500

Vessel Electromagnetic Signature Prediction and Control

CHAIR: Samantha Davidson, Capability Manager, Ultra Electronics, UK

Investigation into effects of ICAF system current on Underwater Electric Potential (UEP)
Robbie Ashby, CM Beasy, UK

🕒 1545

Localisation of coating defects by using the impressed current cathodic protection system
Christian Thiel, PhD Student, University of Duisburg-Essen, Germany

🕒 1610

End of Day 3

🕒 1635

DAY 4: FRIDAY 30 JUNE

Morning refreshments

🕒 0830

Vessel Electromagnetic Signature Prediction and Control

CHAIR: Eugene Lepelaars, Senior Research Scientist, TNO, Netherlands

Closed loop degaussing - MASTERCODE project

Lt Cdr Hendrik Jacob Vink, Deputy Netherlands Coordinator, Centre for Ship Signature Management, Germany

🕒 0900

A study on ship deperming coil system using High Temperature Superconducting cable technology

Megumi Hirota, Representative, Naval Ship Magnetic & UEP Research Committee, Japan

🕒 0925

Inverse modeling of a ship's magnetic signature using regularisation methods

Mads Stormo Nilsson, Scientist, Norwegian Defence Research Establishment (FFI), Norway

🕒 0950

Poster Highlights – Two minute overviews by the poster presenters

🕒 1015

Coffee break for visiting exhibitors and posters

🕒 1030

Seafloor & Sub-Bottom Electromagnetic Exploration

CHAIR: Johan Mattsson, EM R&D Manager, PGS, Sweden

Bayesian signal processing techniques for the detection of localised magnetic anomalies

Gareth Brown, Principal Scientist, Dstl, UK

🕒 1115

PETGEM: potential of 3D CSEM modelling using a new HPC tool for exploration geophysics

Octavio Castillo-Reyes, Associate PhD Student, Barcelona Supercomputing Center, Spain

🕒 1140

Uncertainty quantification in the Controlled Source Electromagnetic Measurements

Nick Polydorides, Senior Lecturer, University of Edinburgh, UK

🕒 1205

Lunch Break

🕒 1230

Oceanographic Electromagnetics

CHAIR: Brad Nelson, President, Aeromagnetic Solutions Inc, Canada

Isolating the Magnetic Signatures of Internal Waves

Eric Nieves, Student, Florida Atlantic University, USA

🕒 1345

Magnetic signature of surface waves in laboratory experiment

John Kluge, PhD Candidate, Nova Southeastern University, USA

🕒 1410

Command and Control (C2) of cross-domain Unmanned Vehicles (UxVs) mine countermeasures applications

Vladimir Djapic, Chief Scientist, SPAWAR Systems Center Pacific, USA

🕒 1435

Coffee break for visiting Exhibitors and Posters

🕒 1500

Electromagnetic Surveillance and Communication Systems

CHAIR: Romina Gehrmann, Research Fellow, University of Southampton, UK

Real-time underwater object detection based on DC resistivity using high-precision instrument

Sung-Ho Cho, Researcher, Korea Institute of Geoscience & Mineral Resources, South Korea

🕒 1545

SQUID based magnetic full tensor gradiometer for maritime application

Michael Schneider, PhD Student / Scientist, Technische Universität Ilmenau, Germany

🕒 1610

Degaussing system performance prediction: validation of FEM simulations of a naval vessel

Bart Jan Peet, Researcher, TNO, Netherlands

🕒 1635

End of Conference

🕒 1700