

Session 11 EM Applications on Marine Studies

Chair person: Denis Willen, Nick Palshin

9.00 – 9.15 h: **S11-E2. Using an electric downhole transmitter to detect a resistive target in a marine environment.**

R. Nigel Edwards, Carsten Scholl

9.15 – 9.30 h: **S11-E3. Imaging of the South Chilean subduction zone with an amphibious magnetotelluric experiment**

Gerhard Kapinos, Heinrich Brasse

9.30 – 9.45 h: **S11-E5. Fast and rigorous inversion of marine CSEM data using iterative migration**

Michael S. Zhdanov, Takumi Ueda, Alexander Gribenko

9.45 – 10.00 h: **S11-E8. Marine electromagnetic studies of Hydrate Ridge, Oregon, USA- imaging hydrates and the accretionary complex**

Karen Weitemeyer, Steven Constable, Kerry Key

Coffee Break 10.00 - 10.30 h

10.30– 10.45 h: **S11-E7. Undulation of 410-km discontinuity beneath the Philippine Sea plate as inferred from geomagnetic vertical gradient sounding method**

Hiroaki TOH, Akio Hibino, Tadanori Goto, Hisashi Utada, Nobukazu Seama

10.45 – 11.00 h: **S11-E4. Mantle Upwelling Beneath the East Pacific Rise at 9°30' N**

Kerry Key, Steve Constable

Session 4 Inversion and integration of different geosciences data

Chair person: Michel Chouteau, Max Moorkamp

11.00 – 11.15 h: **S4-E1. Two-Dimensional Joint Inversion of Radiomagnetotelluric and Direct Current Resistivity Data**

M. Emin Candansayar, Bülent Tezkan

11.15– 11.30 h: **S4-E4. Joint 2D audiofrequency magnetotelluric and seismic refraction cross-gradients imaging: implications for lithofacies and structural classification**

Max A. Meju, Luis A. Gallardo

11.30 – 11.45 h: **S4-E5. Joint inversion of MT and seismic receiver function data using a genetic algorithm**

Max Moorkamp, Alan G. Jones, C.K Rao

11.45 – 12.00 h: **S4-E2. A structural approach to joint three-dimensional inversion of geophysical data**

Niklas Linde, Ari Tryggvason, Andrew Binley, Laust B. Pedersen, André Revil

12.00 – 12.30 h: **INVITED REVIEW PAPER. MT+, Integrating Magnetotellurics to Determine Earth Structure, Composition, and Processes**

Paul A. Bedrosian

Session 6: EM Applications for Environmental Studies

Tuesday 19th September 2006

Chair person: Niklas Linde, Doug Oldenburg

8.30 – 8.45 h: **S6-E11. Environmental assessment of the Amchitka Island Nuclear Test site (Alaska) with magnetotelluric data**

Martyn Unsworth, Wolfgang Soyer, Volkan Tuncer

8.45 – 9.00 h: **S6-E1. Geophysical exploration integrated with hydrogeological data of a deep multiaquifer system: results from a pilot site**

Antonio Bratus, Dimitra Rapti-Caputo, Riccardo de Nardi, Giovanni Santarato

9.00 – 9.15 h: **S6-E4. Detecting areas with sulfidic sediments using RMT surveys**

Mehrdad Bastani, Lena Persson, Gustav Sohlenius

9.15 – 9.30 h: **S6-E5. Evolution and Distribution of Biogenic Gasses in Peat Soils**

Xavier Comas, Lee Slater

9.30 – 9.45 h: **S6-E6. Electromagnetic imaging of deep basement grabens for sustainable regional groundwater development in the eastern margin of Parnaiba basin, Brazil**

Sergio Fontes, Max Meju

9.45 – 10.00 h: **S6-E3. AMT and seismic assessment of a Deltaic aquifer system**

Ester Falgàs, Juanjo Ledo, Beatriz Benjumea, Alex Marcuello, Pilar Queralt, T. Teixidó

Coffee Break 10.00 - 10.30 h

10.30– 10.45 h: **S6-E10. On the first field data of a new radiomagnetotelluric device operating in the frequency range from 10 kHz to 1 MHz**

B. Tezkan, A. Saraev, V. Schuman, P. Georgescu, N. B. Christensen

10.45 – 11.00 h: **S6-E9. Geophysical estimation of dissolved apparent porosity and salt loads**

Yusen Ley-Cooper, James Macnae, Sarah Tweed

11.00–11.30 h: **INVITED REVIEW PAPER. Near surface electromagnetic characterization of hydraulic conductivity: from petrophysical properties to aquifer geometries**

Lee Slater

Session 9: EM Observation of Lithospheric mantle Processes

Chair person: Alan G. Jones, Sophie Hautot

11.30–11.45 h: **S9-E7. SAMTEX (Southern African Magnetotelluric Experiment): Overview and First Results**

A. Jones, X. Garcia, M. Hamilton, M. Miensopust, M. Muller, J. Spratt, R. Evans, A. Chave, S. Fourie, E. Stettler, R. Stettler, J. Cole, H. Ngwisanyi, D. Hutchins, S. Evans, D. Hatch, A. Mountford, E. Cunion, SAMTEX team.

11.45–12.00 h: **S9-E6. Comparison of electrical and seismic anisotropy of southern Africa**

Mark P. Hamilton, Alan G. Jones, Robert L. Evans, Shane F. Evans, C.J.S. Fourie

12.00–12.15 h: **S9-E3. Channel flow and crustal decoupling around the Eastern Himalaya Syntaxis— Evidence from preliminary MT model from EHS3D Project**

D. Bai, M. Meju, B. Arora, X., C. Jiang, Z. Zhou, C. Zhao, L. Wang

12.15–12.30 h: **S9-E5. Magnetotelluric imaging of the Eurasian-Arabian collision in Eastern Anatolia**

Ersan Turkoglu, Martyn Unsworth, Ilyas Caglar, Volkan Tuncer, Umit Avsar, Bulent Tank

Session 10: EM Applications on Seismology and Volcanology

Chair person: Nicolas Coppo, Toshihiro Uchida

9.00 – 9.15 h: **S10-E7. 2004 M6.0 Parkfield earthquake places constraints on changes of electrical properties and fields prior to, during, and after earthquakes**
Stephen K. Park

9.15 – 9.30 h: **S10-E5. Triggering and Synchronization of mechanical instabilities during Stick-Slip with superimposed electromagnetic forcing**
Marina Devidze, T. Chelidze, Teimuraz Matcharashvili, Nodar Varamashvili, Victor Chikhladze

9.30 – 9.45 h: **S10-E6. Three-dimensional Electromagnetic Image of Kusatsu-Shirane Volcano, Japan and its Implications for Hydrothermal System**
Nurhasan, Yasuo Ogawa, Naoto Ujihara, S. B. Tank, Yoshimori Honkura

9.45 – 10.00 h: **S10-E4. Seismogenic, Electrically Conductive, and Fluid Zones at Continental Plate Boundaries in New Zealand, Himalaya, and California-USA**
George R. Jiracek, V. M. Gonzalez, T. G. Caldwell, Philip E. Wannamaker, Debi Kilb

Coffee Break 10.00 - 10.30 h

10.30– 10.45 h: **S10-E3. A model of pore geometry redistribution to explain resistivity change at the field scale**
Sophie Hautot, Pascal Tarits

10.45 – 11.15 h: **INVITED REVIEW PAPER: EM monitoring and Network-MT data**
Makoto Uyeshima

Session 3: Modelling and Inversion of EM Data

Chair person: Josef Pek, Antje Franke

11.15– 11.30 h: **S3-E6. On the resolution of magnetotellurics**
Vitaliy Kuznetsov, Nickolay Palshin, Mark Berdichevsky

11.30 – 11.45 h: **S3-E1. An efficient compact finite-element modelling method for the practical 3D inversion of electromagnetic data from high contrast complex structures**
Fred Sugeng, Art Raiche and Glenn Wilson

11.45 – 12.00 h: **S3-E5. Neural network inversion of 2D magnetotelluric data in model classes of geoelectrical sections**
Shimelevich, M.I., Osborne, E.A.

12.00 – 12.15 h: **S3-E12. Three-Dimensional FEM Modeling of Magnetotelluric Data Observed in Jeju Island, Korea**
Myung Jin Nam, Hee Joon Kim, Yoonho Song, Tae Jong Lee, Jung Hee Suh

12.00 – 12.15 h: **S3-E13. A non-linear truncated SVD variance and resolution analysis of 2D magnetotelluric models**
Thomas Kalscheuer, Laust B. Pedersen

Session 3: Modelling and Inversion of EM Data

Friday 22th September 2006

Chair person: Josef Pek, Antje Franke

8.30 – 8.45 h: **S3-E9. Fast simulation of transient electromagnetic fields using a Krylov subspace projection technique**

Ralph-Uwe Börner, Oliver G. Ernst, and Klaus Spitzer

8.45 – 9.00 h: **S3-E18. Joint Inversions of (TEM) Data Sets**

Carsten Scholl, Stefan L. Helwig, Bülent Tezkan

9.00 – 9.15 h: **S3-E11. Reconstruction of buried obstacles with sampling methods**

Wagner Muniz, Andreas Kirsch

9.15 – 9.30 h: **S3-E17. Model resolution and model accuracy in EM induction studies**

Ulrich Schmucker

9.30 – 9.45 h: **S3-E4. Towards Practical Inversion of 3D Electromagnetic Data**

Doug Oldenburg, Eldad Haber, Scott Napier, Roman Shekhtman

Session 1: Instrumentation, Controlled Source EM and New developments

Chair person: Bernard Friedrichs, Valery Korepanov

9.45 – 10.00 h: **S1-E1. Multi-Transient Electromagnetics (MTEM) – controlled source equipment for subsurface resistivity investigation**

Bruce Hobbs, Anton Ziolkowski, David Wright

Coffee Break 10.00 - 10.30 h

10.30 – 10.45 h: **S6-E2. Improving electromagnetic induction detector technology in humanitarian demining**

R.C. Bailey, G.F. West.

Session 2: Data Processing and Response Functions Analysis

Chair person: Anna Martí, László Szarka

10.45 – 11.00 h: **S2-E5. Processing of AMT data using the Wavelet transform**

Xavier Garcia, Alan Jones

11.00 – 11.15 h: **S2-E1. Processing controlled source electromagnetic data**

Oleg Pankratov, Alexey Geraskin

11.15 – 11.30 h: **S2-E3. The utility of MT data and analysis techniques in the prediction of geomagnetically induced currents in power networks**

Allan McKay, Kathy Whaler

11.30 – 11.45 h: **S2-E2. Marine CSEM Data Processing Methods**

Dennis Willen, Xinyou Lu, ExxonMobil Charlie Jing, Ida Gallegos,

Session 12: Global EM Induction Studies using Satellites and Ground Data

Chair person: George Balasis, Antonio Padilha

11.45 – 12.00 h: **S12-E1. EOF analysis of magnetic observatory data: Further evidence for non-axisymmetric magnetospheric sources for satellite induction studies**

Gary D. Egbert, Georgios Balasis

12.00 – 12.15 h: **S12-E3. Electrical Conductivity in the Earth's Mantle: Combined Inversion of Surface, CHAMP and Ørsted Observations**

J. Velínský, Z. Martinec

12.15 – 12.30 h: **S12-E2. The three-dimensional structure of global mantle conductivity – a new inverse solution**

Anna Kelbert, Adam Schultz, Gary Egbert

Session 7:EM Applications for Energy and Mineral resources

Saturday 23th September 2006

Chair person: Adelle Manzella, Zalina Dzhatieva

8.30 – 8.45 h: **S7-E6. Possible magmatic input to the Dixie Valley geothermal field, Nevada, USA, with implications for district-scale resource exploration, inferred from MT surveying**

Philip E. Wannamaker, Derrick P. Hasterok, William M. Doerner

8.45 – 9.00 h: **S7-E4. 3D modelling of magnetotelluric phase tensor data from the Rotokawa geothermal field, Taupo Volcanic Zone, New Zealand**

Wiebke Heise, T. Grant Caldwell, Hugh M. Bibby

9.00 – 9.15 h: **S7-E5. Preliminary Magnetotelluric survey results of Arus-Bogoria geothermal prospect, Kenya**

Josphat Mulwa, Nicholas Mariita, Justus Barongo, Jayanti Patel

Session 8:EM Observations of Crustal Processes

Chair person: Martyn Unsworth, Mark Hamilton

9.15 – 9.30 h: **S8-E8. Magnetic phase transition and magnetotellurics**

László Szarka, János Kiss, Erni Prácser

9.30 – 9.45 h: **S8-E3. Crustal and upper mantle structure in eastern boundary of Tibet plateau by MT data**

Zhao Guoze, Chen Xiaobin, Tang Ji, Sun Jie, Wang Lifeng, Wan Zhansheng, Zhan Yan

9.45 – 10.00 h: **S8-E2. Constraining ophiolitic emplacement in NE Oman: a case study from magnetotelluric sounding**

S. Thiel, G. Heinson, D.R. Gray, and R.T. Gregory

Coffee Break 10.00 - 10.30 h

10.30– 10.45 h: **S8-E4. Geoelectrical image of the Trans-European Suture Zone: the EMTESZ project in Poland**

EMTESZ Working Group, Maxim Smirnovn.

10.45 – 11.00 h: **S8-E5. Crustal structure deduced from MT studies across Iapetus Suture zone in Ireland**

C.K. Rao, Alan G. Jones, Max Moorkamp

11.00–11.15 h: **S8-E6. Large scale resistivity surveys combining magnetic and magnetotelluric observations; Examples from central Australia**

Ole Hanekop

11.15–11.30 h: **S8-E10. A quest for conductors at the fault zone of the western part of North Anatolian Fault (NAF) by Audio-frequency Magnetotellurics (AMT)**

S.Bulent Tank, Yoshimori Honkura, Yasuo Ogawa, Elif Tolak, M.Kemal Tuncer, Naoto Oshiman, Masaki Matsushima

11.30–12.00 h: **INVITED REVIEW PAPER. How is the European Lithosphere imaged by Magnetotellurics?**

Toivo Korja