

**INTERNATIONAL WORKSHOP
ON ELECTROMAGNETIC SOUNDINGS**

**IN MEMORY OF PROFESSORS MARK M. BERDICHEVSKY
AND PETER WEIDELT**

Moscow-Zvenigorod, June 10-17, 2010

Organizers

Free University of Berlin
Geoelectromagnetic Research Centre IPE RAS
Moscow State University, Faculty of Geology
Shirshov Institute of Oceanology RAS

Sponsors

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SCHEDULE

Data	Sections*) / Chaired by	Reports Presentation numbers	Presentation time	Posters numbers and presentation time
June 10 Thursday	1 /Heinrich Brasse and Nick Palshin	1.1 – 1.12	10.00–14.00	–
June 11 Friday	2 /Buelent Tezkan and Ivan Varentsov	2.1 – 2.12	10.00–14.00	2.13 – 2.15 14.00-14.20
	3 /John Booker and Michael Zhdanov	3.1 – 3. 8	16.00–18.15	–
June 12 Saturday	4 /Tomasz Ernst and Anatoly Rybin	4.1 – 4.14	10.00–14.00	4.15 – 4.19 14.00-14.20
	5 / Andreas Hoerd and Pavel Pushkarev	5.1 – 5.10	16.00-18.30	5.11 – 5.15 18.30-18.50

***) Sections:**

1. Memorial

2. Basic theory

3. Marine EM studies

4. Deep EM studies

5. Prospecting EM studies

SCIENTIFIC PROGRAMME

June, 10 (Thursday)

Moscow State University, Geological Faculty

Section 1. Memorial (Chaired by Heinrich Brasse and Nikolay Palshin)

No/ time	Authors	Title
1.1/ 10.05	Bogoslovsky V.A., Dmitriev V.I., Golubtsova N.S., Khmelevskoy V.K., Pushkarev P.Yu. , Yakovlev A.G.	Mark Berdichevsky and his role in scientific geophysical school of Geological Faculty of Moscow State University
1.2./ 10.20	Hoerdts Andreas	Peter Weidelt – the helpful authority
1.3./ 10.35.	Kulik Sergei N.	Mark Berdichevsky – a kievian
1.4./ 10.50	Zhdanov Michael S.	Prof. M.N. Berdichevsky and the creation of modern magnetotellurics
1.5./ 11.10	Berdichevsky Mark N., Dmitriev Vladimir I. and Zhdanov Michael S.	Problems and prospects of magnetotellurics
1.6./ 11.30	Zhamaletdinov Abdoukhay A.	Mark Berdichevsky and Leonid Vanyan – two outstanding researchers of the Earth's crust and upper mantle electrical conductivity
1.7./ 11.45	Rokitiatsky Igor I., Tereshyn A.V.	Electromagnetic sounding of the Moon

12.00 Coffee break

1.8./ 12.20	Varentsov Ivan M.	Compact and adaptive parameterization in the inverse problems of deep geoelectrics: from EMSLAB to EMTESZ in touch with Mark Berdichevsky
1.9./ 12.40	Rybin Anatoly K. and NARYN WG.	Mark Berdichevsky and EM studies of the Tien Shan deep structure and dynamics: results from 80-90's
1.10./ 13.00	Sokolova Elena Yu. and NARYN WG	Mark Berdichevsky and EM studies of the Tien Shan deep structure and dynamics: recent approaches to joint interpretation of MT/MV data in high mountains
1.11./ 13.20	Berdichevsky Mark N., Fainberg Eduard B., Singer Bension Sh.	Possibilities and limitations of the dynamic correction method in MT soundings
1.12./ 13.40	Spichak Viacheslav V., Bezruk Igor A. and Goidina Alexandra G.	Neuronet based technique for construction of 3D geoelectric models from profile and array archive MT data

14.00 Lunch

15.00 Excursion through Moscow State University

16.00 Transfer to Zvenigorod

20.00 Ice-Breaker in Zvenigorod

June, 11 (Friday)

Zvenigorod, Moscow Region, “Zvenigorodsky” RAS Pension

Section 2. Basic theory (Chaired by Buelent Tezkan and Ivan Varentsov)

No/ time	Authors	Title
2.1./ 10.00	Junge Andreas	The magnetotelluric phase tensor: theory and practice
2.2./ 10.20	Booker John R.	The magnetotelluric phase tensor revisited
2.3./ 10.40	Weckmann Ute	Electrical anisotropy vs. 3D
2.4./ 11.20	Spitzer Klaus	Three-dimensional EM forward modeling using vector finite elements on unstructured grids
2.5./ 11.40	Persova Marina G., Soloveichik Y.G. and Trigubovich G.M.	3D interpretation of EM sounding data based on numerical 3D modeling: theory and practice

12.00 Coffee break

2.6./ 12.15	Jozwiak Waldemar, Ernst Tomasz, Jankowski Jerzy and Nowozynski Krzysztof	MV studies in Poland and their tectonic implications
2.7./ 12.30	Kovacikova Svetlana, Varentsov Ivan M., EMTESZ and KIROVOGRAD WGs	Quasi-3D inversion of horizontal MV responses
2.8./ 12.45	Pushkarev Pavel Yu. and Ivanov Pavel V.	Possibilities of interpretation of MT data obtained on a single profile over 3D structures
2.9./ 13.00	Burakhovich Tatiana K. and Kulik Sergei N.	Longitudinally inhomogeneous structures: MV and MT parameters
2.10./ 13.15	Zhdanov Michael S., Green Marie, Gribenko Alexander V., Čuma Martin and Wilson Glenn	Large-scale 3D inversion of EarthScope MT data from the northwestern United States
2.11./ 13.30	Hachay Olga A.	The development of Peter Weidelt’s ideas in the theory of interpretation of EM data
2.12./ 13.45	Aleksandrov Pavel N. and Aleksandrov Aleksandr N.	Source-wise approximation in 3D problems of electrical prospecting

14.00 – 14.20 Posters presentation

2.13.	Cherevatova Maria, Vagin S. and Smirnov M.	Two-dimensional inversion of the impedance tensor determinant with damped least squares solution by singular value decomposition
2.14.	Shuman Vladimir N. and Semenov Vladimir Yu.	Induction impedances: new approaches and their modelling
2.15	Yegorov Igor	Numerical-analytical approach to solve 3D geoelectric inverse problems

14.20 Lunch

Section 3. Marine EM studies (Chaired by John Booker and Michael Zhdanov)

No/ time	Authors	Title
3.1/ 16.00	Jegen Marion	Development and application of marine electromagnetics at IFM-GEOMAR, Germany
3.2/ 16.20	Brasse Heinrich	Explaining exotic transfer functions at the South and Central American margins
3.3/ 16.40	Schwalenberg Katrin	Marine CSEM for submarine gas hydrate exploration
3.4/ 17.00	Hördt Andreas, Bhatt K.-M., Weidelt P.	Effects of ocean movement on marine EM data
3.5/ 17.20	Velikhov Evgeny P., Zhdanov Michael S., Kruglyakov Mikhail S., Korotaev Sergei M., Orekhova Darya A., Popova Irina V., Schors Yury G.	Development of direct EM methods to search for hydrocarbons in the sea
3.6/ 17.35	Zhdanov Michael S., Kruglyakov Mikhail S., Korotaev Sergei M., Orekhova Darya A., Trofimov Igor L., Shneyer Vitaly S. and Schors Yury G.	Perspectives of the MT sounding in the Arctic Ocean
3.7/ 17.50	Kruglyakov Mikhail S.	The impedance method in the remote sounding problems
3.8/ 18.00	Trofimov Igor L., Popova Irina V. and Korotaev Sergei M.	Effects of small scale forms of ocean floor on EM responses in application to MV studies in the Arctic Ocean

19.00 Dinner

20.00 Free discussion, memories & photo

June, 12 (Saturday)

Zvenigorod, Moscow Region, “Zvenigorodsky” RAS Pension

Section 4. Deep EM studies (Chaired by Tomasz Ernst and Anatoly Rybin)

No/ time	Authors	Title
4.1./ 10.00	Korja Toivo , Palshin Nickolay A., Varentsov Ivan M. and Smirnov Maxim Yu.	Electrical conductivity of the upper mantle beneath Fennoscandia
4.2./ 10.20	Pavlenkova Ninel I.	EM data on the nature of seismic waveguides and destruction zones in the continental lithosphere
4.3./ 10.40	Szarka Laszlo , Kiss J., Prácsér Erno and Ádám Antal	About geophysical crustal anomalies due to hypothetical magnetic phase transition
4.4./ 11.00	Ritter Oliver , Rybin Anatoly K., Munoz G., Batalev Vladislav, Sass P.	MT data from the Tien Shan and Pamir continental collision zones, Central Asia
4.5./ 11.20	Batalev Vladislav, Bataleva Elena, and Rybin Anatoly K.	Xenolith constraints on conductivity of the Tarim – Tien Shan junction zone
4.6./ 11.30	Bai Denghai , Varentsov Ivan and Sokolova Elena	Deep geoelectric model of the Eastern Tibet derived from the joint inversion of long-period MT/MV data with implications to recent Yushu earthquake
4.7./ 11.45	Smirnov Maxim , Korja Toivo and Egbert Gary	MT array data processing in the EMMA project
12.00 Coffee break		
4.8./ 12.15	Novák Attila, Szarka László and Ádám Antal	EM imaging in geophysics with tensor invariants: from the near-surface to Transdanubian deep structures
4.9./ 12.30	Belyavsky Viktor V.	Application of impedance tensor invariants in the study of the Earth’s crust and upper mantle
4.10./ 12.45	Surina Olesia and Dyakonova Aza G.	Electro-gravitational model of the Middle Trans-Ural region
4.11./ 13.00	Walia Devesh , Gokarn S.G., Selvaraj C. and Sanabam S.S.	Geoelectric structure over the Arakan-Yoma Fold Belt, Surma Basin
4.12./ 13.15	Moroz Yury and Moroz Tamara	The research of magnetotelluric field in the Baikal region
4.13./ 13.30	Maksymchuk V. , Ladanivsky Boris and Kobzova Valentina	Studies of structure and recent geodynamics of the Antarctic peninsula by EM methods
4.14./ 13.45	Hachay Olga A. and Khachay Yury	The role of deep geoelectrics for defining the mechanisms and structure of convection in the Earth’s mantle
14.00 – 14.20 Posters presentation		
4.15	Borzotta E.	Use of MV results to improve the distortion diagnostics in deep MT soundings
4.16	Horodysky Y., Klymkovych T., Maksymchuk V. , Kuznetsova V.	The results of Wiese vectors continuous observations in the Transcarpathian region

4.17	Moroz Yury and Moroz Tamara	On dynamics of magnetic tipper and horizontal tensor from the Magadan and Petropavlovsk-Kamchatskii observatory data
4.18	Popova Irina , Nesteruk O. I., Spichak V.V., Goidina A.G., Matyukov V.E. and Rybin A.K.	Application of neural network time series data prediction for the forecast of seismic events
4.19	Zaitsev Georgy N. and Kushnir A.N.	MT and MV observations in the region of high seismic activity (Dnestrovskiy water basin, Ukraine)

14.20 Lunch

Section 5. Prospecting EM studies (Chaired by Andreas Hoerd and Pavel Pushkarev)

5.1./ 16.00	Hallbauer-Zadorozhnaya Valeria , Binley A.M. and De Beers F.	Characterising pore size distributions in sandstones: a comparison of approaches
5.2./ 16.15	Tezkan Buelent	2D joint inversion of DC and RMT data: a case study on groundwater contamination
5.3./ 16.30	Kulikov Viktor A., Varentsov Ivan M. , Yakovlev Andrey G. and Yakovlev Denis V.	2D inversion of MT/MV data in mining application: a case study on drilled deposit
5.4./ 16.45	Nurmukhamedov A.G., Alekseev Dmitry A. , Pankratov Oleg V., Yakovlev Andrey G.	3D geoelectrical model of Mutnovsky geothermal field
5.5./ 17.00	Antaschuk K.M. , Pertel M.I., Saraev A.K., Denisov R.V., Nikiforov A.E., Romanova N.E.	The experience of MT/AMT survey for geothermal exploration on the Kamchatka peninsula
5.6./ 17.15	Aleksanova Elena, Alekseev Dmitry A. , Yakovlev Andrey G.	Magnetotelluric studies in the salt-dome tectonic settings in the Pre-Caspian depression
5.7./ 17.30	Stefaniuk Michal , Wojdyla M.	Results of MT structural investigations in the Polish Eastern Carpathians
5.8./ 17.45	Stefaniuk Michal , Maj E., Sito L., Slys M., Wojdyła M.	Recognition of hydrocarbon deposits in Polish Carpathians based on EM methods
5.9./ 18.00	Martin Tina and Niederleithinger Ernst	Resistivity and electromagnetic methods in nondestructive testing
5.10./ 18.15	Sizov Yury P.	Reason of the temperature dependence of the HF EM field damping impulses of the georadar probe

18.30-18.50 Posters presentation

5.11	Hallbauer-Zadorozhnaya Valeria , Chirenje E., Nyabeze P.	Application of DC resistivity and TDEM to water ingress investigation
5.12	Khmelevskoy Viktor K.	Magnetotellurics and radio wave interference soundings

5.13	Kuksenko V.S. and Makhmudov Kh.F.	Mechanoelectric effects in rocks
5.14	Simakov Alexander , Saraev Alexander, Antonov Nikolay and Shlykov Arseny	Mobile and CS modifications of the RMT method and prospects of their application in the near- surface geophysics
5.15	Sizov Yury P. and Kanonidi Kharlampy D.	Detection of atmospheric electricity simultaneous E_z and I_z pulsations

19.00 Dinner

20.00 Closing discussion, memories & photo

June, 13. Zvenigorod, Moscow Region, “Zvenigorodsky” RAS Pension

10.30 Seminar excursion (town and monastery)

14.00 Lunch

15.00 Transfer to Moscow

June, 14. Alexandrovka, Kaluga Region, Geophysical base of Moscow State University

07.30 Transfer from Moscow

13.00 Field geophysical excursion (instruments and technologies)

18.30 Transfer to Moscow

**June, 15-17. Borok, Yaroslavl Region, Geomagnetic observatory,
Institute of Physics of the Earth, Russian Academy of Sciences**

June, 15

08.00 Transfer Moscow – Borok

10.00 Excursion in Sergiev Posad

12.30 Excursion and lunch in Uglich

16.00 Visit to Borok observatory

19.00 Dinner

June, 16

09.30 Transfer Borok – Pereslavl-Zalesskii

10.30 Excursion in Myshkin

13.30 Excursion and lunch in Rostov Velikii

18.00 Excursion in Pereslavl-Zalesskii

20.00 Dinner

June, 17

10.00 Visit to the Institute of Program Systems, Russian Academy of Sciences

12.30 Excursion and lunch in Pereslavl-Zalesskii

16.00 Transfer to Moscow