

SCIENTIFIC PROGRAM

Monday, 30 September 2013

- 14:30–14:40 **Conference opening:**
- 14:40–15:30 **Moderator:** Moderator of the panel discussion: Arkady Kryazhimskiy, mathematician, Steklov Mathematical Institute, RAS; International Institute for Applied Systems Analysis (Russia);
- Participants** Dmitry Razumovsky *The Minister of Information Society and Innovation of the Kaluga region*; Chulliat Arnaud *Director of magnetic observatories, Paris Institute of Physics of the Earth*; Alik Ismail-Zadeh, *Secretary General, International Union of Geodesy and Geophysics*; Pavel Hejda *Institute of Geophysics, Academy of Sciences of the Czech Republic*; Claude Jaupart *Director of Paris Institute of Physics of the Earth*

SESSION 1. Geophysical observation systems and data mining



Moderator of the panel discussion: Alik Ismail-Zadeh, geophysicist, Secretary General, International Union of Geodesy and Geophysics, (Germany/Russia);

Panelists: Claude Jaupart (France), Hans-Joachim Linthe (Germany), Sergey Tikhotsky (Russia), Nikolai Shapiro (France), and Mikhail Kaban (Germany).

- 15:30–16:00 Panel discussion.

KEYNOTE SPEAKERS:

Chair – Pavel Hejda, Institute of Geophysics, Academy of Sciences of the Czech Republic.

- 16:00–16:25 Claude Jaupart “Main research activities of the Paris Institute of Physics of the Earth and the French global system of geophysical observatories”.
- 16:25–16:50 Konstantin Tsibulya “Prospects of geophysical monitoring in Russia”.
- 16:50–17:15 Sergey Tikhotsky “Academic geophysics demanded in oil and gas complex”.
- 17:15–17:35 Coffee break.
- Chair – Claude Jaupart, Paris Institute of Physics of the Earth.
- 17:35–18:00 Nikolai Shapiro “Imaging and monitoring the Earth’s interior based on new passive seismic methods”.
- 18:00–18:25 Hans-Joachim Linthe “Challenges of the modernisation of Russian

geomagnetic observatories – the GFZ Potsdam experiences”.

18:25–18:50 Mikhail Kaban “Toward a high-resolution global crustal model based on new principles of data analysis”.

18:50–19:00 Moderator’s conclusions.

OTHERS:

Chair – Arnaud Chulliat, Paris Institute of Physics of the Earth.

19:10–19:20 Pavel Babayants “Modern airborne magnetic surveys in Russia”.

19:20–19:30 Pavel Hejda “Geomagnetic observations and space weather studies in the Czech Republic”.

19:30–19:40 Vladimir Pavlov “Permo-Triassic catastrophe and magnetostratigraphic correlation of the main volcanic sections of the Siberian traps”.

19:40–19:50 Vladimir Kossobokov “Is solar cycle 24 already in decline?”.

19:50–20:00 Jacques Zlotnicki “10 years of International cooperation for monitoring Taal volcano (The Philippines)”.

20:00–20:10 Igor Aleshin “Real-time 3D ionospheric imaging from GNSS ground based network data”.

20:10–20:20 Sergey Filippov “Role of the balloon gradient magnetic surveys in the creation of new approaches for the decision of actual tasks of geomagnetism”.

20:20–20:30 Oleg Novik “Low frequency EM field interactions in geospheres including the noosphere”.

Tuesday, 1 October 2013

SESSION 2. High quality observations of the Earth’s magnetic field



Moderator of the panel discussion: Alexei Gvishiani, geophysicist and mathematician, Director, Geophysical Center, RAS;

Panelists: Arnaud Chulliat (France), Carol Finn (USA), Vitaly Starostenko (Ukraine), Anatoly Soloviev (Russia), Pavel Hejda (Czech Republic), and Vladimir Kuznetsov (Russia);

09:00–09:30 Panel discussion.

KEYNOTE SPEAKERS:

Chair – Laszlo Hegymegi, MinGeo Ltd.

09:30–09:55 Arnaud Chulliat “The French geomagnetic network: present status and future prospects”.

09:55–10:20 Carol Finn “The Diverse Utility of Ground-Based Magnetometer Data”.

- 10:20–10:45 Vitaly Starostenko “The study of the Earth’s magnetic field and Ukrainian segment of INTERMAGNET”.
- 10:45–11:10 Xavier Lalanne “First results of a new measurement method for magnetic repeat stations, based on night time operation and GNSS geodesy”.
- 11:10–11:35 Anatoly Soloviev “Russian-Ukrainian center for geomagnetic data retrieval and exchange”.
- 11:35–11:45 Moderator’s conclusions.
- 11:45–12:00 Coffee break.

OTHERS:

Chair – Vladimir Kuznetsov, Pushkov Institute of Terrestrial Magnetism, Ionosphere and Radio Wave Propagation, RAS.

- 12:00–12:10 Sergey Anisimov “Variations of a geomagnetic field for INTERMAGNET data of Borok Geophysical Observatory”.
- 12:10–12:20 Laszlo Hegymegi “Present development stage of automatic baseline controlling dIdD ABCD magnetometer”.
- 12:20–12:30 Yuri Kopytenko “Magnetometric INTERMAGNET facilities at the magnetic observatory “Krasnoe lake”.
- 12:30–12:40 Yuri Sumaruk “Geomagnetic observatory “Odessa”: from the past to the future”.
- 12:40–12:50 Valeriy Petrov “Semi-automatic method of the magnetometer baseline values measurement”.
- 12:50–13:00 Nikolay Shustov “Geophysical observatory of Moscow University in Alexandrovka, Kaluga region”.
- 13:00–13:10 Andrey Khokhlov “Magnetic data the global modelling of the secular variations of the Earth’s main magnetic field: new methods and results”.
- 13:10–13:20 Alexander Potapov “Observations of ULF waves from the solar atmosphere to the Earth’s surface: New facts”.
- 13:20–13:30 Alexey Kuvshinov “Space weather and the safety of ground infrastructures. A concept to simulate and predict EM effects from substorm activity using ground-based geomagnetic observations and observations from ACE satellite”.
- 13:30–13:40 Andriy Marusenkov “Pre-installation calibration of the 1-second INTERMAGNET magnetometer LEMI-025”.
- 13:40–13:50 Viktor Getmanov “Nonlinear filtering of 1-second geomagnetic field records of a vector and a scalar magnetometer on the basis of local approximation models”.

SESSION 3. Multifunctional intellectual methods for geophysical, ecological, socio-economic and biomedical research



Moderator of the panel discussion: Arkady Kryazhimskiy, mathematician, Steklov Mathematical Institute, RAS; International Institute for Applied Systems Analysis (Russia);

Panelists: Nadejda Komendantova (Austria), Alexey Lushnikov (Russia), John Broome (Canada), Pavel Kabat (Austria), and Tatiana Khromova (Russia);

15:00–15:30 Panel discussion.

KEYNOTE SPEAKERS:

Chair – Jacques Zlotnicki, National Center for Scientific Research.

15:30–15:55 Alexey Lushnikov “Evolution models for geomedical statistics”.

15:55–16:20 John Broome “The New CODATA Strategic Plan”.

16:20–16:45 Nadejda Komendantova “Generic Multi-Risk Model and Decision-Support Tool for Mitigation of Multiple Natural Hazards Process”.

16:45–17:10 Tatiana Khromova “GIS for the cryosphere research”.

17:10–17:20 Moderator’s conclusions.

17:20–17:30 Break.

OTHERS:

Chair – Petr Havlik, International Institute for Applied System Analysis.

17:30–17:40 Andrey Leonov “Stereo 3D visualization of geophysical data on a virtual globe”.

17:40–17:50 Alexandr Kagan “A linear model of population dynamics”.

17:50–18:00 Maria Ragulskaya “Helio-ecology information systems for screening and prediction of the biosphere dynamics”.

18:00–18:10 Vladislav Zaalishvili “Influence of mining industry on ecological situation on the urbanized area (in GIS-technologies)”.

18:10–20:00 **Poster session and exhibition of instruments and innovative technologies.**

Chair – Anatoly Soloviev, Geophysical Center, RAS.

19:00–20:00 **Business meeting (by invitation):**

Progress in development of Russian INTERMAGNET observatories.

Conveners: Anatoly Soloviev and Roman Krasnoperov, Geophysical Center, RAS.

Wednesday, 2 October 2013

SESSION 4. Advanced system analysis, data mining and artificial intelligence in processing time series from geomagnetic, geophysical, ecological, socio-economic and biomedical observations



Moderator of the panel discussion: Pavel Kabat, ecologist, Director and Chief Executive Officer, International Institute for Applied Systems Analysis (Austria);

Panelists: Arkady Kryazhimskiy (Russia), Alexei Gvishiani (Russia), Alexander Soloviev (Russia), Elena Rovenskaya (Austria), Steffen Fritz (Austria), Iliya Blekhman (Russia), and Claude Jaupart (France);

09:00–09:30 Panel discussion.

KEYNOTE SPEAKERS:

Chair – John Broome, Committee on Data for Science and Technology.

09:30–09:55 Pavel Kabat “Integrated approaches towards better understanding of the functioning of the Earth system”.

09:55–10:20 Arkady Kryazhimskiy “Towards recognition of early warning signals on financial crises”.

10:20–10:45 Steffen Fritz “Citizens as sensors and the potential to gather vast amounts of data: examples from the geo-wiki project”.

10:45–11:10 Alexander Soloviev “Could we predict extreme events in complex socio-economical systems?”

11:10–11:35 Iliya Blekhman “On some current problems of applied mathematics”.

11:35–12:00 Elena Rovenskaya “On methods of representation, visualization and analysis of large data arrays in exploration of systemic risks: Example of food-webs”.

12:00–12:10 Moderator’s conclusions.

12:10–12:25 Coffee break.

OTHERS:

Chair – Alexander Soloviev, Institute of Earthquake Prediction Theory and Mathematical Geophysics, RAS.

12:25–12:35 Petr Havlik “Challenges and opportunities of Euroasian economic integration”.

12:35–12:45 Oleg Pokhotelov “Mirror modes: Half a century of theory and observations”.

12:45–12:55 Hanna Lappalainen “Pan-Eurasian Experiment (PEEX). A new research initiative focused on the Northern Pan-Eurasian region”.

12:55–13:05 Irina Chizhova “Geoinformation technologies at the forecasting of placer deposits”.

13:05–13:15 Michael Dobrovolsky “Discrete mathematical analysis for data mining”.

SESSION 5. Geology, geophysics and geoinformatics of the arctic region: multifunctional observatories and intelligent GIS



Moderator of the panel discussion: Tatiana Khromova, geographer, Institute of Geography, RAS;

Panelists: Vasiliy Bogoyavlenskiy (Russia), Pavel Kabat (Austria), Matvey Shparo (Russia), Oleg Prischepa (Russia), Renata Lukianova (Russia), and Vladimir Lapshin (Russia);

14:30–15:00 Panel discussion.

KEYNOTE SPEAKERS:

Chair – Tatiana Khromova, geographer, Institute of Geography, RAS.

15:00–15:25 Matvey Shparo “Travelling around Arctica: How it was”.

15:25–15:50 Chandrasekhar Kirthi Singam “Addressing wellbore position challenges in ultra-extended-reach drilling in Russia’s far east”.

15:50–16:15 Vasiliy Bogoyavlenskiy “Complex geological and geophysical survey of the Arctic region”.

16:15–16:40 Oleg Prischepa “Hydrocarbon resource base of Arctic regions of Russia. Multifactorial technical and economical aspects of its exploration and development”.

16:40–17:05 Renata Lukianova “Magnetic observations in the Arctic and the Antarctic region”.

17:05–17:15 Moderator’s conclusions.

17:15–17:25 Break.

OTHERS:

Chair – Claude Jaupart, Paris Institute of Physics of the Earth.

17:25–17:35 Natalia Kleimenova “High-latitude geomagnetic substorms and pulsations based on Arctic observations”.

17:35–17:45 Alexander Janzhura “Geomagnetic monitoring in Arctic and Antarctic regions”.

17:45–17:55 Andrey Medvedev “Integration of spatial data on the Arctic territories on the poliscalled levels”.

17:55–18:05 Vladimir Kaftan “Global navigation satellite system observation as a part of complex geophysical observation systems”.

18:05–18:20 A film about Dmitry Shparo, famous Soviet traveller.

POSTER SESSION

On 1st of October from 18:10 to 20:00 participants will be given one minute to describe orally the essence of their poster to the audience.

Participants with poster presentation are welcome to prepare one PowerPoint slide.

Session 1

ID 11. Alexander Gorshkov “Recognition of earthquake-prone areas: validity of the methodology”.

ID 12. Pavel Pushkarev “Application of geomagnetic variations data to study electric conductivity of the Earth's crust and mantle”.

ID 13. Ljudmila Gromova “Extremely quiet 2009 state of geomagnetic field as a reference level of geomagnetic disturbances for estimating geomagnetic activity”.

ID 14. Ravil Rakhmatulin “Complex of ISTP SB RAS for monitoring of geophysical fields at high and middle latitudes”.

ID 15. Dmitry Krasnoshchekov “Estimates of seismic coda length and relevant local magnitude scale obtained from k-order alpha-shapes of seismic records”.

ID 17. Oleg Novik “Electromagnetic signals of dangerous dynamics in the geospheres including the noosphere”.

Session 2

ID 21. Yuri Kopytenko “Geophysical complex GI-MTS-1”.

ID 22. Sergey Khomutov “First results of magnetic measurements using DIDD magnetometers GSM-19FD (GEM Systems) at observatories of IKIR FEB RAS”.

ID 23. Roman Krasnoperov “Modern technological approaches for deployment of INTERMAGNET observatories in Russia”.

ID 24. Roman Sidorov “Spline filtering of geomagnetic field records”.

ID 25. Viktor Getmanov “Jerk models on the basis of generalized splines for time series of the geomagnetic observations”.

ID 27. Justin Mabie “IAGA world magnetic observatories”.

ID 29. Nataliya Shikhova “Geomagnetic PC 1 type pulsations in a database of Borok geophysical observatory”.

Session 3

ID 32. Victor Tatarinov “Modeling and monitoring of Nizhnekansky granitoid massif (for selecting nuclear waste disposal sites)”.

ID 34. Victor Tatarinov “Prediction method of hazard levels of stress-strain state in Earth crust blocks”.

ID 35. Juliya Lyuboutseva “Analysis of data on demographic structure, mortality and morbidity of population in Russian Federation”.

Session 4

ID 41. Boris Dzeboev “Discrete mathematical analysis clustering of epicenters and strong earthquake-prone areas”.

ID 42. Shamil Bogoutdinov “DPS algorithm. Application to time series and two-dimensional reliefs”.

ID 43. Anna Bochnerova “System approach in studying of heavy mineral placer deposits”.

ID 44. Oleg Pankratov “Efficient calculation of the Hessian matrix of EM data misfit using the adjoint sources approach”.

ID 45. Alla Borisova “Integrated Land Ecosystem-Atmosphere Processes Study”.

Session 5

ID 51. Alexander Zaitsev “The state and prospects for Yamal geophysical network”.

ID 52. Segey Filippov “Long duration stratospheric balloon gradient geomagnetic balloon missions as a support of a SWARM mission”.