

Sobolev Institute of Geology and Mineralogy SB RAS

(IGM SB RAS)

Trofimuk Institute of Petroleum Geology and Geophysics SB RAS

(IPGG SB RAS)

Novosibirsk State University

(NSU)



CONFERENCE PROGRAMME

13-24 June 2022,

Novosibirsk

The X International Siberian Early Career GeoScientists Conference
will be held from 13 to 24 June 2022

Location:

Sobolev Institute of Geology and Mineralogy, SB RAS (IGM SB RAS);
Trofimuk Institute of Petroleum Geology and Geophysics, SB RAS (IPGG SB RAS)
Novosibirsk, Koptiyuga ave. 3

Website: <http://sibconf2020.igm.nsc.ru>

Conference e-mail: sibconf2022@gmail.com

The Conference was supported by IGM SB RAS, IPPG SB RAS, NSU, JSC "Siberian Anthracite", JSC "Almazy Anabara", Data East, LLC, PJSC "Gazprom Neft", Laboratory of ore-forming systems IGM SB RAS and SGA Siberian Student Chapter.

ORGANIZING COMMITTEE

Co-chairmen:

Dr. Nikolay N. Kruk, Corresponding Member of RAS, Director of IGM SB RAS

Dr. Vyacheslav N. Glinskikh, Corresponding Member of RAS, Director of IPGG SB RAS

Dr. Valery A. Vernikovskiy, Academician of RAS, Dean of the DGG NSU

Conference Secretariat:

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Technical Editors: Elena O. Shaparenko (IGM SB RAS)

Time limit:

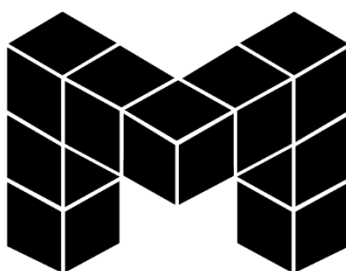
Oral presentation - 10 min.

Questions and discussion after talk – 5 min.

Posters should have a vertical A1: 841 x 594 mm format.

June 13

<i>12.00 – 16.00</i>	REGISTRATION <i>IGM&IPGG SB RAS Main conference hall</i> <i>(Koptyuga Ave. 3, Novosibirsk)</i>
<i>Sightseeing in Academgorodok and Novosibirsk</i> <i>(by the participants themselves)</i>	



MINERALOGY
2022

June 14

<p align="center">MINERALOGY <i>(Main conference hall)</i> Chairman: Sokol E.V. <i>Secretary: Deviatiiarova A.S.</i></p>	
8.30 – 16.00	Registration
9.00 – 9.15	Opening ceremony of the X International Siberian Early Career GeoScientists Conference
9.15 – 9.45	<p><u>Sokol E.V.</u>, Kokh S.N., Sharygin V.V.</p> <p>MINERALOGICAL DIVERSITY: CASE STUDY OF THE HATRURIM COMBUSTION METAMORPHIC ROCKS (DEAD SEA REGION)</p>
9.45 – 10.00	<p><i>Ruban A.S.</i></p> <p>METHANE-DERIVED AUTHIGENIC CARBONATES OF THE LAPTEV SEA CONTINENTAL SLOPE</p>
10.00 – 10.15	<p><i>Serebriannikov A.A., Logvinova A.M.</i></p> <p>FEATURES OF THE TRACE ELEMENT COMPOSITION OF MANTLE-DERIVED CHROME SPINELS</p>
10.15 – 10.30	<p><i>Agasheva E.V.</i></p> <p>THE COMPOSITION OF LITHOSPHERIC MANTLE BENEATH THE LOW-DIAMONDIFEROUS TSNIGRI-ARKHANGELSKAYA KIMBERLITE PIPE (ARKHANGELSK DIAMONDIFEROUS PROVINCE, NW RUSSIA)</p>
10.30 – 10.45	<p><i>Glushkova V.E., Peretyazhko I.S., Savina E.A., Khromova E.A.</i></p> <p>Ca-Mg-Fe OLIVINES IN PARALAVAS OF THE NYALGA COMBUSTION METAMORPHIC COMPLEX, CENTRAL MONGOLIA</p>
10.45 – 11.00	<p><i>Donskikh K.G., Gavryushkin P.N., Banaev M.V.</i></p> <p>THE DESCRIPTION OF ARAGONITES TWINNING FROM THE DEPOSITS OF SPAIN, MOROCCO AND RUSSIA</p>
11.00 – 11.15	<p><i>Tarasov A.A.</i></p> <p>MINERALOGY ASSEMBLAGE OF OLIVINE-HOSTED SECONDARY MELT INCLUSIONS FROM BULTFONTEIN PIPE (SOUTH AFRICA) AND CONSTRAINTS ON THE PRIMARY KIMBERLITE MELT COMPOSITION</p>
11.15 – 11.30	Coffee break
11.30 – 11.45	<p><i>Nekipelova A.V., Sokol E.V., Kokh S.N.</i></p> <p>FORMATION CONDITIONS OF FE-MN CARBONATES FROM KERCH IRONSTONES: EVIDENCE FROM STABLE ISOTOPES</p>
11.45 – 12.00	<p><i>Deviatiiarova A.S., Sokol E.V., Kokh S.N., Reutsky V.N., Izokh O.P., Pyryaev A.N.</i></p> <p>METAMORPHISM VS METASOMATISM: STABLE ISOTOPE CONSTRAINTS (CASE STUDY OF THE KOCHUMDEK CONTACT AUREOLE, EAST SIBERIA)</p>

12.00 – 12.15	Aksenov S., Stefano Merlino MODULARITY OF THE CRYSTAL STRUCTURES OF MINERALS AND SYNTHETIC COMPOUNDS WITH THE GENERAL FORMULA $A_2M_3(TO_4)_4$
12.15 – 12.30 <i>online</i>	Lytkevich A.D. PECULIARITIES OF THE MINERAL COMPOSITION OF THE POBEDA-2 HYDROTHERMAL FIELD (MAR)
Lunch break	
EXPERIMENTAL MINERALOGY <i>(Main conference hall)</i> Chairman: Rashchenko S.V. Secretary: Deviatiiarova A.S.	
14.00 – 14.30	<u>Rashchenko S.V.</u> CRYSTAL CHEMISTRY OF ANION-CENTERED POLYHEDRA AND 'ANTIZEOLITE' STRUCTURES
14:30 – 14.45	Novoselov I.D., Bataleva Yu.V., Palyanov Yu.N. EXPERIMENTAL MODELING OF CARBONATION AND DECARBONATION REACTIONS INVOLVING ECLOGITIC GARNET UNDER UPPER MANTLE P,T-PARAMETERS
14:45 – 15.00	Semerikova A., Chanyshv A. D., Glazyrin K., Pakhomova A., Kurnosov A., Litasov K., Dubrovinsky L., Fedotenko T., Rashchenko S. EXPERIMENTAL STUDY OF METHANE BEHAVIOUR AT THE HIGH-PRESSURE HIGH-TEMPERATURE CONDITIONS OF ICE GIANTS INTERIORS
15.00 – 15.30 <i>online</i>	<u>Vymazalová A.</u> CZECH GEOLOGICAL SURVEY: NEWS FROM PGM WORLD
16.00 – 17.00	EXCURSION TO THE EARTH EVOLUTION MUSEUM <i>(NSU)</i>
17.30 – 19.30	Ice Break party <i>(Main conference hall)</i>
18:30	Group photo

June 15

PETROLOGY, GEOCHEMISTRY AND GEOCHRONOLOGY

(Main conference hall)

Chairman: Khromykh S.V., Dymshits A.M.

Secretary: Kotler P.D., Kulikova A.V.

9.30 – 10.00	<u>Dymshits A.M.</u> THERMAL AND REDOX STATE OF THE CRATONIC LITHOSPHERIC MANTLE: CONSTRAINTS FROM THE PERIDOTITE XENOLITHS FROM THE KIMBERLITE PIPES
10.00 – 10.30	<u>Khromykh S.V., Kotler P.D.</u> LATE PALEOZOIC OROGENIC AND POST-OROGENIC MAGMATISM IN EASTERN KAZAKHSTAN: STAGES, SCALES AND GEODYNAMIC SETTINGS
10.30 – 10.45	<i>Pilitsyna T.A., Samsonov A.V., Erofeeva K.G.</i> METAMORPHIC EVOLUTION OF THE ARCHEAN TOKMOVO MEGABLOCK AND OF SURROUNDING PALEOPROTEROZOIC OROGENIC BELTS (VOLGO-URALIA SEGMENT, EAST EUROPEAN CRATON)
10.45 – 11.00	<i>Iakimov T.S.</i> PETROGRAPHIC FEATURES OF EARLY CRETACEOUS GRANITES OF THE GABASS RISE (SEA OF JAPAN)
11.00 – 11.15	Coffee break
11.15 – 11.30 <i>online</i>	<i>Ivanov M.S., Ivanov A.I., Loskutov. E.E., Zhuravlev A.I.</i> MAFIC MINERALS OF THE MEDVEDEV MASSIF (SOUTH YAKUTIA)
11.30 – 11.45	<i>Kotler P.D., Khromykh S.V., Semenova D.V., Kulikova A.V., Saetgaleeva Ya.Ya.</i> THERMOCHRONOLOGY OF THE KALBA BATHOLITE GRANITES
11.45 – 12.15	<i>Kulakova E.P.</i> TOWARD SUCCESSFUL ABSOLUTE DATING OF EARLY PALEOLITHIC SITES
12.15 – 12.30	<i>Kondrashova E.S.</i> VOLCANOGENIC MATERIAL IN HIGH-CARBON SEDIMENTS OF THE BAZHENOV FORMATION OF THE WEST SIBERIAN SEDIMENTARY BASIN
12.30 – 12.45	<i>Minnebaev K.R., Kulikova A.V., Batalin G.A.</i> MINERAL COMPOSITION AND FORMATION CONDITIONS OF TURBIDITES OF THE KURAI AND TYDTUYARYK FORMATIONS (GORNÝ ALTAI)
12.45 – 13.00	<i>Sokolova L.A., Yakubovich O.V., Podolskaya M.M.</i> RECONSTRUCTION OF THE EXHUMATION HISTORY OF THE KONDYOR RIDGE BASED ON THE RESULTS OF U-Th-He DATING OF APATITE
<i>Lunch break</i> EXCURSION TO THE CENTRAL SIBERIAN GEOLOGICAL MUSEUM <i>(IGM SB RAS)</i>	
14.30 – 14.45	<i>Abersteiner A., Beier C., Genske F., Kamenetsky V.S.</i> DECIPHERING THE MULTI-STAGE EVOLUTION OF MANTLE XENOLITHS FROM HEARD ISLAND, SOUTHERN INDIAN OCEAN

14.45 – 15.00	<i>Kenesbayev B.K.</i> RADIOGEOCHEMICAL FEATURES OF THE ALTAI-SAYAN FOLDED REGION LAMPROPHYRES
15.00 – 15.15 <i>online</i>	<i>Bagdasaryan T.E., Veselovskiy R.V., Latyshev A.V., Thomson S.N., Zaitsev V.A., Marfin A.E.</i> THERMAL EVOLUTION OF THE SIBERIAN TRAPS LARGE IGNEOUS PROVINCE BASED ON RESULTS OF APATITE FISSION-TRACK ANALYSIS AND OTHER GEOCHRONOLOGICAL DATA FROM INTRUSIVE COMPLEXES
15.15 – 15.30	<i>Gurova A.V., Safonova I.Y., Perfilova A.A., Savinsky I.A., Kotler P.D</i> IGNEOUS ROCKS OF THE TEKTURMAS ACCRETIONARY COMPLEX, CENTRAL KAZAKHSTAN: GEOLOGICAL POSITION, GEOCHEMICAL CHARACTERISTICS, AND GEODYNAMIC SETTINGS OF FORMATION
15.30 – 15.45	<i>Mikhno A.O., Shatskiy A.F., Korsakov A.V., Berndt J., Klemme S., Rezvukhina O.V., Rashchenko S.V.</i> CaCO ₃ GENETIC TYPES DISCRIMINATION IN UHP DOLOMITIC MARBLE FROM THE KOKCHETAV MASSIF: IMPLICATIONS FROM TRACE ELEMENT COMPOSITION
<p style="text-align: center;">POSTER SESSION (Main conference hall) 16.30 – 19.00</p>	

June 16

	<i>Main conference hall</i>	<i>Mineralogical conference hall, aud. 332 IGM</i>	<i>Geophysical conference hall, aud. 315 IPGG</i>
<i>9.30 – 10.00</i>	METALLOGENY, MINERAGENY AND ORE GENESIS <i>10.00 – 12.30</i>	GEOECOLOGY, HYDROGEOLOGY, ENGINEERING GEOLOGY AND ENVIRONMENTAL MANAGEMENT <i>9.30 – 12.45</i>	GEOPHYSICAL RESEARCH METHODS <i>10.00 – 12.30</i>
<i>12.30 – 14.30</i>	<i>Lunch break</i>		
<i>14.30 – 16.00</i>	METALLOGENY, MINERAGENY AND ORE GENESIS <i>14.30 – 15.30</i>	PALEONTOLOGY AND STRATIGRAPHY <i>14.30 – 16.00</i>	GEOPHYSICAL RESEARCH METHODS <i>14.30 – 16.15</i>
<i>17.00 – 18.00</i>	EXCURSION TO THE EARTH EVOLUTION MUSEUM (NSU)		
<i>19.00 – 00.00</i>	<i>Gala dinner</i> (Recreation center «Mayak», Lodochnaya 2/3)		

June 16

METALLOGENY, MINERAGENY AND ORE GENESIS

(Main conference hall)

*Chairman: Naumov E.A.
Secretary: Shaparenko E.O.*

10.00 – 10.30	<u>Naumov E.A.</u> MINERAL RESOURCE BASE OF GOLD IN THE RUSSIAN FEDERATION AND ITS DEVELOPMENT PROSPECTS
10.30 – 10.45	<i>Krasilnikov P.A. Gareev B.I.</i> GEOLOGICAL STRUCTURE AND QUARTZ TYPOMORPHISM OF HYDROTHERMAL VEINS OF THE KHURCHANSKAYA PERSPECTIVE AREA (MAGADAN REGION)
10.45 – 11.00	<i>Tikhomirov D.V.</i> ISOTOPE-GEOCHEMICAL MODEL OF FORMATION OF THE NIKOLAIVSKOE Pb-Zn SKARN DEPOSIT (SIKHOTE-ALIN)
11.00 – 11.15	Coffee break
11.15 – 11.30	<i>Shaparenko E.O., Khomenko M.O.</i> THE BLAGODATNOYE GOLD DEPOSIT (YENISEI RIDGE, RUSSIA): PTX PARAMETERS OF ORE-BEARING FLUIDS
11.30 – 11.45	<i>Makhinya E.I., Mohammed A.E.I</i> FEATURES OF THE GEOLOGICAL STRUCTURE OF THE GOLD - BEARING TARLAU PLACERS (SOUTHERN URALS)
11.45 – 12.00 online	<i>Izvekova A.D., Damdinov B.B.</i> TELLURIDE MINERALIZATION IN THE PIONERSKOE GOLD- QUARTZ DEPOSIT (EASTERN SAYAN, RUSSIA)
12.00 – 12.15	<i>Rudmin M.A., Kalinina N.A., Maximov P.N.</i> FORMATION OF SIDERITE IN MARINE OOIDAL IRONSTONES ON EXAMPLE OF BAKCHAR DEPOSIT (WESTERN SIBERIA)
12.15 – 12.30	<i>Garcia J.A., Tolstykh N.D.</i> CRYPTIC COMPOSITIONAL TRENDS OF ORES AND SILICATES AS AN EVIDENCE OF AT LEAST TWO MAGMA PULSES IN THE MAIN ORE HORIZON OF THE Ni-Cu PGE NORILSK 1 INTRUSION (MIDDLE PART)
Lunch break	
14.30 – 15.00 online	<u>Bozkaya G.</u> ORE FORMING FLUIDS CHARACTERISTICS OF GOLD DEPOSITS FROM NW TÜRKIYE
15.00 – 15.15 online	<i>Oğuz B., Bozkaya G., Bozkaya Ö.</i> PRELIMINARY FLUID INCLUSIONS STUDIES IN THE LS EPITHERMAL KARADERE GOLD DEPOSIT (NW TURKIYE)

<i>15.15 – 15.30 online</i>	<i>Tenlik T.G., Bozkaya G., Bozkaya Ö.</i> FLUID INCLUSION AND STABLE ISOTOPE CONSTRAINTS ON THE ORE FLUIDS IN THE BLACK-SHALE HOSTED MANGANESE DEPOSIT: ULUKENT-DENIZLI, SW TURKEY
<i>17.00 – 18.00</i>	EXCURSION TO THE EARTH EVOLUTION MUSEUM
<i>19.00 – 00.00</i>	<i>Gala dinner</i>

June 16

<p>GEOECOLOGY, HYDROGEOLOGY, ENGINEERING GEOLOGY AND ENVIRONMENTAL MANAGEMENT (Mineralogical conference hall, aud. 332 IGM) Chairman: Myagkaya I.N. Secretary: Ovdina E.A.</p>	
9.30 – 10.00	<u>Slukovskii Z.I.</u> GEOCHEMISTRY AND GEOECOLOGY OF MODERN LAKE SEDIMENTS OF URBANIZED AREAS IN THE NORTH AND ARCTIC OF RUSSIA
10.00 – 10.15	<i>Tikhonova D.A., Ivanova E.V.</i> MICROPLASTICS IN WATER AND SEDIMENTS OF LAKE LADOGA AND THE GULF OF FINLAND
10.15 – 10.30	<i>Ryumina A.A., Tishchenko P.Ya., Shkirnikova E.M., Goryachev V.A.</i> STUDY OF VERTICAL DISTRIBUTION OF TRACE METALS IN BOTTOM SEDIMENTS OF SHALLOW COVES OF PETER THE GREAT BAY
10.30 – 10.45	<i>Kurbonov N.B., Normakhmedova Z.O., Mitusov A.V., Normatov I.S.</i> INTEGRATED HYDROCHEMICAL RESEARCHES OF SEASONAL SNOWS ON THE GLACIERS OF THE UPPER ZERAFSHAN VALLEY AND THE QUALITY OF WATER OF THE ZERAFSHAN RIVER
10.45 – 11.00	<i>Vilkina M.V., Nikulenkova A.A., Rumynin V.G.</i> THE FLOW CHARACTERISTIC OF THE CAMBRIAN BLUE CLAYS IN SCOPE OF HAZARDOUS WASTE DISPOSAL
11.00 – 11.15	Coffee break
11.15 – 11.30	<i>Myagkaya I.N.</i> AUTHIGENIC MINERALIZATION IN EXOGENETIC CONDITION ON EXAMPLE OF TAILINGS AND MINE SYSTEMS
11.30 – 11.45	<i>Ovdina E.A., Strakhovenko V.D., Malov G.I., Malov V.I.</i> GEOCHEMISTRY AND MINERALOGY OF SMALL LAKES BOTTOM SEDIMENTS IN THE SUBTAIGA ZONE, SOUTH OF WESTERN SIBERIA
11.45 – 12.00 <i>online</i>	<i>Suchkov D.V., Litvinova T.E., Shaykina K.D.</i> FEATURES OF INTEGRATED PROCESSING AND UTILIZATION OF MINING WASTE AS A SECONDARY RESOURCE (ON THE EXAMPLE OF PHOSPHOGYPSUM)
12.00 – 12.15	<i>Revunova A.V.</i> METHOD FOR DETERMINING THE PARTICLE SIZE COMPOSITION OF BOTTOM SEDIMENTS IN THE SUBMICRON SIZE RANGE
12.15 – 12.30 <i>online</i>	<i>Aleshina A.R.</i> CHANGES IN THE FORMS OF DISSOLVED ORGANIC MATTER AND IRON UNDER IRRADIATION IN NATURAL BOREAL WATERS
12.30 – 12.45	<i>Ukrainsev A.V.</i> DISSOLVED ORGANIC MATTER IN CO ₂ -RICH MINERAL WATERS OF TRANSBAIKALIA

<i>Lunch break</i>	
<p align="center">PALEONTOLOGY AND STRATIGRAPHY <i>(Mineralogical conference hall, aud. 332 IGM)</i></p> <p align="center"><i>Chairman: Kosenko I.N.</i> <i>Secretary: Efremenko V.D.</i></p>	
<i>14.30 – 15.00</i>	<u>Grazhdankin D.V.</u> THE AVALON BIOTA OF THE VENDIAN: MYSTERIOUS CREATURES FROM THE ABYSS OR A SEDIMENTOLOGICAL CONSPIRACY?
<i>15.00 – 15.15</i>	<i>Volchatova E.V., Bezrukova E.V., Kulagina N.V.</i> HISTORY OF VEGETATION CHANGE IN THE SENTSA RIVER VALLEY IN THE HOLOCENE
<i>15.15 – 15.30</i> <i>online</i>	<i>Nosheen M., Zorina S. O.</i> ELEMENTAL CHEMOSTRATIGRAPHY AS A SEQUENCE STRATIGRAPHICAL TOOL (A CASE STUDY FROM THE NORTH-EASTERN ULYANOVSK-SARATOV TROUGH OF THE EASTERN RUSSIAN PLATFROM)
<i>15.30 – 15.45</i>	<i>Efremenko V.D.</i> STATISTICAL METHODS IN PALEONTOLOGY: APPLICATIONS TO MORPHOLOGY AND BIODIVERSITY OF AN EARLIEST CRETACEOUS BELEMNITES OF NORTHERN SIBERIA
<i>15.45 – 16.00</i> <i>online</i>	<i>Nikashin K.I., Zorina S.O.</i> PALEOTEMPERATURES AND OXYGEN ISOTOPIC COMPOSITION OF THE MIDDLE VOLGIAN BLACK SHALES (ULYANOVSK-SARATOV TROUGH, EASTERN RUSSIAN PLATFORM)
<i>17.00 – 18.00</i>	EXCURSION TO THE EARTH EVOLUTION MUSEUM
<i>19.00 – 00.00</i>	<i>Gala dinner</i>

June 16

<p align="center">GEOPHYSICAL RESEARCH METHODS <i>(Geophysical conference hall, aud. 315 IPGG)</i> Chairman: Mikhaylov I.V. Secretary: Fedoseev A.A.</p>	
10.00 – 10.30	<u>Mikhaylov I.V.</u> CONTEMPORARY WELL LOGGING TECHNOLOGIES: FROM THEORY TO PRACTICE
10.30 – 10.45 <i>online</i>	Sidorenko A.I., Bobrova D.A. THE EXPERIENCE OF USING THE GEORADOLocation METHOD TO DETERMINE THE LAYERS OF SNOW WITH THE HELP OF GPR "OKO-2"
10.45 – 11.00	Shaparenko I.O. ASSESSMENT OF ELECTRICAL RESISTIVITY VARIATIONS IN THE GORNY ALTAI REGION FAULT ZONE USING ERT MONITORING
11.00 – 11.15	Coffee break
11.15 – 11.30	Trofimov I.V., Tereshkin S.A., Snopkov S.V. APPROBATION OF THE METHOD OF ELECTROMAGNETIC PROFILING IN THE STUDY OF ARCHAEOLOGICAL SITES IN THE BAIKAL REGION
11.30 – 11.45	Temirbulatov O.P., Mikhaylov I.V. COMPARISON OF RESISTIVITY LOGGING TOOLS' CAPABILITIES AS APPLIED TO GEOSTEERING PROBLEMS
11.45 – 12.00	Zaplavnova A.A., Esin E.I., Olenchenko V.V. POTENTIAL FIELDS STUDY IN THE KELBES-ZOLOKITAT ORE CLUSTER
12.00 – 12.15	Minina V.V., Ksenofontov I.V. SEISMOSTRATIGRAPHY AND SEDIMENTATION ENVIRONMENT IN THE WESTERN COOPERATION SEA
12.15 – 12.30	Volkova A.A. MAGNETIC FIELD ATTRIBUTES FOR THE GEOLOGICAL DESCRIPTION
12.30 – 12.45 <i>online</i>	Dudinskaya E.V., Absalyamova D.F. ASSESSMENT OF DECLINATION AND INCLINATION OF THE VECTOR OF REMANENT MAGNETIZATION ACCORDING TO HISTORICAL DATA AT STUDY OF ARCHAEOLOGICAL OBJECTS IN THE BAIKAL REGION
Lunch break	
14:30 – 15.00 <i>online</i>	<u>Gulten Polat</u> SEISMIC ANISOTROPY AND SHEAR-WAVE SPLITTING
15.00 – 15.15	Medved I.V. THE FEATURES OF LITHOSPHERE STRUCTURES IN VARIOUS COLLISION ZONES OF EURASIA BASED ON SEISMIC TOMOGRAPHY STUDIES

15.15 – 15.30	<i>Komzeleva V.P., Medved I.V., Koulakov I.Yu., Buslov M.M., Seredkina A.I.</i> CRUSTAL STRUCTURE OF THE BAIKAL RIFT ZONE BASED ON LOCAL SEISMIC TOMOGRAPHY
15.30 – 15.45	<i>Ivanov A.D., Jakovlev A.V., Koulakov I. Yu.</i> CRUSTAL THICKNESS IN CENTRAL KAMCHATKA INFERRED FROM RECEIVER FUNCTION TECHNIQUE
15.45 – 16.00 <i>online</i>	<i>Shakirova A.A.</i> COMPARATIVE CHARACTERISTICS OF PERIODIC EARTHQUAKES DURING ERUPTIONS OF KARYMSKY AND KIZIMEN VOLCANOES (RUSSIA, KAMCHATKA PENINSULA)
16.00 – 16.15	<i>Berezhnev Y.M., Belovezhets N.N., Shapiro N.M., Koulakov I.Y.</i> AMBIENT NOISE CORRELATION REVEALS TEMPORAL CHANGES OF SEISMIC VELOCITIES BELOW BEZYMANNY VOLCANO PRIOR TO AN EXPLOSIVE ERUPTION
17.00 – 18.00	EXCURSION TO THE EARTH EVOLUTION MUSEUM
19.00 – 00.00	<i>Gala dinner</i>

June 17

REGIONAL GEOLOGY AND TECTONICS <i>(Main conference hall)</i> Chairman: Safonova I.Yu. Secretary: Perfilova A.A.	
10.00 – 10.30	<u>Safonova I.Yu.</u> PACIFIC-TYPE CONVERGENT MARGINS
10.30 – 10.45	<i>Svecherevskiy A.D., Ustinov S.A., Ostapchuk A.A., Petrov V.A.</i> MICROSTRUCTURAL ANALYSIS OF A TECTONIC FAULT (ON EXAMPLE OF THE PRIMORSKY FAULT OF THE BAIKAL RIFT ZONE)
10.45 – 11.00	<i>Savelev A.D., Khudoley A.K., Malyshev S.V., <u>Pazukhina A. A.</u></i> HOW WIDE WAS ~1000-950 MA MAFIC MAGMATIC EVENT: DATA FROM THE SIBERIAN AND NORTH CHINA CRATONS?
11.00 – 11.15	<i>Milyukova A.G., Skoblenko A.V.</i> STRUCTURES AND COMPOSITIONS OF THE RESIDUAL DUNITE- HARZBURGITE COMPLEX OF THE NORTH BALKHASH OPHIOLITE ZONE (CENTRAL KAZAKHSTAN): GEOCHEMICAL AFFINITY AND TECTONIC SETTING OF FORMATION
11.15 – 11.30	<i>Perfilova A.A., Safonova I.Yu.</i> TERRIGENOUS ROCKS OF THE ITMURUNDY ACCRETIONARY COMPLEX OF NORTHERN BALKHASH, CENTRAL KAZAKHSTAN
11.30 – 11.45	Coffee break
11.45 – 12.00 <i>online</i>	<i>Tashlykov V.S.</i> LITHOCHEMICAL CHARACTERISTICS AND GEODYNAMIC OF THE UPPER PALEOZOIC YAKSHA FORMATION (WESTERN TRANSBAIKALIA)
12.00 – 12.15	<i>Lapaev D.S., Ustinov S.A., Ishmuhametova V.T., Nafigin I.O., Petrov V.A.</i> USING OF GIS TECHNOLOGIES FOR A STRUCTURAL PREDICTIVE DEPOSIT SEARCH MODEL DEVELOPMENT ON THE EXAMPLE OF SOUTHEASTERN TRANSBAIKALIA
12.15 – 12.30	<i>Rakhimov I.R.</i> KAZANIAN-STAGE CHROMSPINEL PLACERS IN THE SOUTHERN PRE-URALS, BASHKIRIA, RUSSIA
12.30 – 12.45	<i>Bogdanov E.A., Kadilnikov P.I., Matushkin N.Yu.</i> DEFORMATION OF THE SOUTHEASTERN PART OF THE TATARKA- ISHIMBA SUTURE ZONE (YENISEI RIDGE): STRUCTURAL AND ⁴⁰ Ar/ ³⁹ Ar GEOCHRONOLOGICAL DATA
Lunch break EXCURSION TO THE CENTRAL SIBERIAN GEOLOGICAL MUSEUM <i>(IGM SB RAS)</i>	

14.30 – 15.00	<u>Zadorozhniy M.V.</u>, Vysotsky E.M., Vishnevsky A.V., Smirnova T.V., Moiseev B.E. SPATIAL DATA INFRASTRUCTURE OF CENTRAL SIBERIAN GEOLOGICAL MUSEUM
15.00 – 15.15	Novikov V.S., Savelev A.D. GEODYNAMIC SETTINGS OF THE RIPHEAN MAGMATISM IN THE SOUTHEASTERN PART OF THE ANABAR SHIELD
15.15 – 15.30	Gushchina M.U., Moiseev A.V., Tuchkova M.I. COMPOSITION OF UST-BELSKY AND ALGAN TERRANES JURASSIC-CRETACEOUS TUFF-SANDSTONES (KORYAK HIGHLAND, NE RUSSIA)
15:30 – 15.45	Pasenko A.M., Malyshev S.V., Pazuhina A.A. PALEOMAGNETISM AND GEOCHRONOLOGY OF LAMPROITES TOMTOR'S DYKES (UDZHA RIVER, SIBERIAN PLATFORM)
15:45 – 16.30	<i>Closing ceremony</i>

June 18-24

Field Trip: Geology, magmatism and metallogeny of Gorny Altai

The field trip will take place along the legendary Chuisky tract - a historical highway stretching across the Altai region. During the field trip you will see: rocks of the oceanic lithosphere and Paleoseamount of the Ediacaran-Cambrian age; carbonate rocks of the Cambrian cap of the Paleoseamount; Kurai accretionary wedge; rocks of the primitive island arc; fore-arc rocks; volcanics of the Devonian active margin, Carboniferous-Permian granitoids of Chike-Taman; Silurian rocks of the passive margin; Paleogene weathering crusts; traces of catastrophic superflood and ice-dammed lake; complex of river terraces. In addition, archaeological sites and other popular places in the Altai Mountains will be shown.

The tour will include two popular science lectures: "Evolution of the Altai Mountains" and "Evolution of the Kurai Accretion-Collision Zone".

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Arefiev A.V., Bekhtenova A., Shatskiy A., Podborodnikov I.V., Litasov K.D.

P-T FIELD OF CARBONATE-ALUMOSILICATE LIQUID IMMISCIBILITY AT 3-6 GPa

Bekhtenova A., Shatskiy A., Arefiev A.V., Podborodnikov I.V., Litasov K.D.

SOLIDUS OF CARBONATED PHLOGOPITE PERIDOTITE AT 3-6.5 GPa

Dauletova A.B.I., Rudmin M.A.

PALEOENVIRONMENTAL CONDITIONS OF CONTINENTAL IRONSTONES OF THE KOCHKOV FORMATION WITHIN THE OB-TUIM LOWLAND (WESTERN SIBERIA, RUSSIA)

Greku E.D.

THE SEQUENCE OF ORE FORMATION OF THE ANOMALOUS DEPOSIT (EAST KAZAKHSTAN)

Kartozliia A.A., Chupina D.A., Glushkova N.V.

SUPERVISED CLASSIFICATION OF PERIGLACIAL LANDFORMS IN THE LENA DELTA SECOND TERRACE BY USING MACHINE LEARNING ALGORITHM

Khusainova A.Sh.

SECONDARY MINERALIZATION ON SULFIDES IN THE ABANDONED TAILINGS (SALAIR RIDGE, RUSSIA)

Komarovskikh A.Yu., Rakhmanova M.I.

SPECTROSCOPIC FEATURES OF ELECTRON IRRADIATED DIAMOND CRYSTALS FROM MIR KIMBERLITE PIPE, YAKUTIA

Krylov P.S., Nurgaliev D.K., Yasonov P.G.

SEISMOACOUSTIC STUDIES OF LAKE SHIRA (REPUBLIC OF KHAKASSIA)

Kuzina D.M., Yusupova A.R., Nourgalieva N.G., Rogov A.M.

MINERAL COMPOSITION OF SABAKTY LAKE SEDIMENTS

Kuzmin I.A., Kalugin V.M.

THE SEQUENCE AND MECHANISMS OF PLATINUM GROUP MINERALS CRYSTALLIZATION FROM EUTECTIC GALENA-CHALCOPYRITE ORES OF THE OKTYABR'SKOE DEPOSIT, NORIL'SK REGION, RUSSIA.

Kuznetsov A.B. Kokh K.A., Kononova N.G., Uralbekov B., Svetlichnyi V.A., Kokh A.E.

SEARCH OF NEW RARE EARTH BORATES PROTOTYPED BY CARBONATE MINERALS

Lebedev A.Yu., Alexandrov I.A., Ivin V.V.

GEOCHEMISTRY OF MID-CRETACEOUS GRANITIC ROCKS OF THE BADZHAL TERRANE (NORTHERN SIKHOTE-ALIN)

Malikova E.L.

INFLUENCE OF CLIMATIC CONDITIONS ON THE DISTRIBUTION OF THE AEOLIAN RELIEF (NORTH WESTERN SIBERIA)

Malov V.I., Strakhovenko V.D., Ovdina E.A.

VIVIANITE IN BOTTOM SEDIMENTS OF LAKE ONEGO

Malov G.I., Strakhovenko V.D., Ovdina E.A.

CONDITIONS FOR THE FORMATION OF LAKES PESCHANOE AND NIZHNEE (BARABA LOWLAND)

Maximov P.N., Rudmin M.A., Dauletova A.B.

GLAUCONITE-UREA NANOCOMPOSITES AS POLYFUNCTIONAL AND ENVIRONMENT-FRIENDLY FERTILIZERS

Mikhailenko D.S., Stepanov A.S., Aulbach S., Gubanov N.V., Korsakov A.V., Xu Yi-G.

ALLANITE IN MANTLE ECLOGITE

Nikolaeva A.N.

FEATURES OF GOLD MINERALIZATION OF THE ABYZ GOLD-PYRITE DEPOSIT (CENTRAL KAZAKHSTAN)

Novikova A.S., Kuznetsov N.B., Romanyuk T.V., Strashko A.V.

AN UPPER AGE CONSTRAINT FOR THE OPHIOLITE ASSOCIATION OF THE CAPE FIOLENT (WEST OF THE MOUNTAINOUS CRIMEA): RESULTS OF U-Pb ISOTOPIC DATING OF PLAGIORHYOLITES (ROCK MONAKH)

Popov M.P., Popova M.A., Chizhik S.A., Nemudry A.P.

DEVELOPMENT OF THE QUASI-EQUILIBRIUM OXYGEN RELEASE METHOD FOR OBTAINING CONTINUOUS PHASE DIAGRAMS OF NONSTOICHIOMETRIC PEROVSKITES

Popova M.A., Popov M.P., Nemudry A.P.

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Sagatova D.N., Gavryushkin P.N.

CRYSTAL CHEMISTRY OF CALCIUM DICARBONATE CaC_2O_5 : STRUCTURAL TREND FROM DOUBLE $[\text{CO}_3]$ TRIANGLES THROUGH ISOLATED $[\text{CO}_4]$ TETRAHEDRA INTO FRAMEWORK AND LAYERS

Sergeev M.S.

EVALUATION OF METHODS FOR CALCULATING THE INTENSITY AND VOLUME OF DEFLATIONARY SNOW TRANSFER BASED ON ACTUAL DATA ON THE EXAMPLE OF YUZHNO-SAKHALINSK

Sergeeva V.M., Leitchenkov G.L.

EVOLUTION OF THE AUSTRALIAN-ANTARCTIC PART OF THE SOUTH EASTERN INDIAN RIDGE IN PALEOCENE - EOCENE

Shapovalova M.O., Tolstykh N.D., Shelepaev R.A.

PERM GABBROID MASSIFS OF THE KHANGAI UPLANDS WITH PGE-CU-NI MINERALIZATION (WESTERN MONGOLIA)

Shmakova A.M., Kulikova K.V.

DEVONIAN BASALTS AND DOLERITES OF THE KANIN PENINSULA AND THE TIMAN RIDGE

Sobolev I.D., Novikova A.S.

THE RESULTS OF U-Pb SIMS DATING OF ZIRCONS FROM HORNBLENDITES OF THE KONGOR PLUTON, POLAR URAL

Rybalchenko S.V.

FORMATION OF TIMBER DRIFTINGS AND LOGJAMS ON THE DEBRIS FLOW OF SAKHALIN ISLAND

Romanenko A.V., Rashchenko S.V., Korsakov A.V., Sokol A.G.

COMPRESSIBILITY AND PRESSURE-INDUCED STRUCTURAL EVOLUTION OF KOKCHETAVITE, HEXAGONAL POLYMORPH OF KAlSi_3O_8 , BY SINGLE-CRYSTAL X-RAY DIFFRACTION

Yusupova A.R., Nourgalieva N.G., Kuzina D.M.

A HOLOCENE CLIMATIC RECORD INDICATED BY GEOCHEMICAL INDICATORS AND GRANULOMETRY FROM BANNOE LAKE IN THE SOUTHERN URAL.

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MINERALOGICAL DIVERSITY: CASE STUDY OF THE HATRURIM COMBUSTION METAMORPHIC ROCKS (DEAD SEA REGION)

Ella V. Sokol*, Svetlana N., Kokh, Victor V. Sharygin

Sobolev Institute of Geology and Mineralogy SB RAS, Novosibirsk, Russia [*sokol@igm.nsc.ru](mailto:sokol@igm.nsc.ru)

The so-called Hatrurim Fm. complexes adjacent to the Dead Sea Transform are among a few Earth areas with abnormally high mineralogical productivity. Their mineralogical productivity was estimated as ($K = M_{\text{minerals}}/N_{\text{elements}} = 140/30 = 4.67$). By December 2018, there had been 140 IMA-approved primary mineral species described in high- and ultrahigh-temperature and low-pressure (UHT-LP) combustion metamorphic (CM) rocks. The topic is focused on the reasons for “burst” of mineralogical productivity of these uncommon rock complexes.

The mineralogy of the UHT-LP rocks varies from predominant oxygen-bearing compounds (99 species; 77.3%) to sulfides + selenides (17; 13%), phosphides (7; 5.5%), and native elements (4; 3.1%). The minerals mainly consist of elements that are abundant in the upper crust but their descending order of species numbers is unusual and records the chemical features of the sedimentary chalky-marly precursors: 99 O, 77 Ca, 53 Si, 42 Fe, 28 Al, 28 S, 19 P, 16 K, 13 Mg, 10 Ti, and 5 Na species. The primary CM mineral assemblages are totally anhydrous, excepting mayenite supergroup minerals containing H₂O or (OH)-groups. Chemically complex solid solutions are typical only of “omnivorous” perovskite, antiperovskite, and NaCl structural types, such as perovskite-brownmillerite series, nabimusaite supergroup minerals, and periclase (Mg,Fe,Ni,Zn)O. Other compounds show relatively low chemical flexibility and are close to the end-member composition of solid solutions. In the Ca-rich environment trace and minor elements also act as mineral-forming species: 15 Ba, 12 Cu, 12 F, 7 Ni, and 5 Zn species, as well as Se, U, Zr, V that form three species each, Mo and Sr (two species each) and Sn, Cr, Ce, and Ag (one species each).

CZECH GEOLOGICAL SURVEY: NEWS FROM PGM WORLD

Anna Vymazalová

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There are currently 163 platinum-group minerals (PGM) recognized by the Commission on New Minerals, Nomenclature and Classification (CNMNC) of the International Mineralogical Association (IMA). As of January 2022 there are 163 known PGM: 78 palladium, 35 platinum, 21 rhodium, 15 iridium, 7 ruthenium and 7 osmium dominant PGM. The largest class of minerals are sulphides (36) followed by tellurides (23) and arsenides (22) reflecting the chalcophile character of PGE; there is also a significant class of alloys consistent with the siderophile character of PGE. Most PGM were described from localities in Russia (63), in particular from the Norilsk-Talnakh deposits, followed by Canada (17), and China (15) and South Africa (15).

CRYSTAL CHEMISTRY OF ANION-CENTERED POLYHEDRA AND 'ANTIZEOLITE' STRUCTURES

Sergey V. Rashchenko

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A proper description of crystal structure and its building units is a key to understand and represent its evolution under varying temperature, pressure, composition etc. In some cases it can also greatly help to understand isomorphic properties and characteristic phase transitions of a structural type.

In this talk I will demonstrate application of descriptive crystal chemistry based on anion-centered polyhedra to a number of case studies from the fields of Earth and materials science including novel 'antizeolite' borate materials and new carbonate phases relevant for the deep carbon cycle.

THERMAL AND REDOX STATE OF THE CRATONIC LITHOSPHERIC MANTLE: CONSTRAINTS FROM THE PERIDOTITE XENOLITHS FROM THE KIMBERLITE PIPES

Anna M. Dymshits

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Mantle xenoliths provide snapshots of the lithospheric mantle beneath the particular regions at the time of their eruption and hence are crucial direct evidence of the nature of the mantle beneath cratons where no samples have been exposed by tectonic activity. Much of our knowledge of cratonic xenoliths is based on the extensive studies of samples from the kimberlites. The trace element compositions of mantle xenoliths minerals provide useful insights into mantle processes. In particular, their rare earth element compositions show strong relationships with the melting and metasomatic history of their host rocks.

To date, comprehensive studies on the composition of the mantle xenoliths as well as the thermal and redox state of the lithospheric mantle have been carried out on the Kaapvaal (South Africa), Slave (Canada) and Siberian (Russia) cratons. The lithospheric mantle laterally and vertically heterogeneous in terms of its oxidation state. The main processes, governing the observed oxygen fugacity variations in the cratonic lithospheric mantle are melt extraction from the mantle during lithospheric mantle formation and subsequent reactions with mantle fluids or melts (i.e., due to mantle metasomatism). In this lecture we will mainly talk about the general problems on the composition, thermal and redox state of the lithospheric mantle in the Siberian craton.

LATE PALEOZOIC OROGENIC AND POST-OROGENIC MAGMATISM IN EASTERN KAZAKHSTAN: STAGES, SCALES AND GEODYNAMIC SETTINGS

Sergey V. Khromykh, Pavel D. Kotler*

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Geological structure of Eastern Kazakhstan region was formed in Late Paleozoic as a result of accretion and collision processes between Siberian and Kazakhstan continents. The four stages of magmatism are determined: 1) Early Carboniferous, early-orogenic, related with slab break-off at the early collision stage; 2) Late Carboniferous, late-orogenic, related with lithospheric extension and strike slip faults; 3) Early Permian, post-orogenic, most scaled, related with effect of Tarim mantle plume on the extensional lithosphere; 4) Early Triassic, intraplate, related with effect of Siberian mantle plume on the lithosphere. Each magmatic stage characterized by own composition of mafic and granitoid complexes that reflect the different composition of substrates and different conditions of partial melting.

MINERAL RESOURCE BASE OF GOLD IN THE RUSSIAN FEDERATION AND ITS DEVELOPMENT PROSPECTS

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Gold, silver and platinum group metals are among the most valuable metals. Russia is one of the leading countries in the world in terms of reserves, production and export of precious metals. Among all types of mineral deposits in the Russian Federation, most licenses (about 77%) were issued for gold prospects. Funding for gold exploration among all kinds of solid minerals in the last 5 years is about 52-63% at the expense of mining companies and about 59% at the expense of the federal exploration budget. Gold is one of the most valuable types of raw materials for export. In 2021, according to the Federal Customs Service of Russia, the volume of gold exports from the Russian Federation amounted to 302.2 tons, 17.4 billion US dollars in monetary terms. Despite the existing problems of gold reserves in the Russian Federation, a further increase in gold production is predicted in the coming years, mainly due to the intensification of operation at a number of deposits (Natalka, Bystrinskoye, Nezhdaninskoye, Olimpiada, Sukhoi Log, etc.). However, already in the foreseeable future, the total balance reserves will begin to decrease. To prevent the possible negative trend in gold production in Russia, it is necessary to discover new gold deposits, which requires intensifying the early stage exploration work to target potential ore fields. Because of the exhaustion of the mineral potential made in the Soviet period, it is necessary to develop new mineral deposit targeting methods and introduce them into the exploration practice.

ORE FORMING FLUIDS CHARACTERISTICS OF GOLD DEPOSITS FROM NW TÜRKIYE

Gülcan Bozkaya¹ David A. Banks², Ömer Bozkaya¹

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The Turkish segment of the Tethyan Eurasian Metallogenic Belt, which extends from western Europe through Anatolia to Iran, is currently being intensively prospected and contains a number of active mines. Western Anatolia and the Biga Peninsula in particular, contain a number of gold dominated deposits (Kışladağ, Efemçukuru, Ovacık, Çatalçam, TV Tower) or base-metal deposits with lesser amounts of gold. There are a number of polymetallic deposits with different metal associations and ages in the Biga Peninsula such as epithermal Au-Ag, porphyry Au-Cu-Mo and epithermal Pb- Zn-Cu-Au deposits. Almost all the deposits are hosted by Tertiary calc-alkaline (andesite, dacite, rhyodacite and rhyolite) and alkaline (olivine basalts) volcanic and volcano-clastic rocks, except for the Bagirkacdere and Arapucandere deposits which are hosted by Paleozoic metamorphic rocks and Permo- Triassic clastics. The principal geological features and formation of the metallogenic belts of Türkiye were controlled by the evolution of the Neotethyan Ocean. Closure of Neotethyan Ocean in the eastern Türkiye resulted in a continent-continent collision during the Miocene, while active continental subduction continued in western Türkiye. An extensional tectonic regime was developed in the latest Oligocene-early Miocene, late Miocene or early Pliocene onwards, that was responsible for magmatism and volcano-sedimentary basin development in western Anatolia.

Epithermal deposits in western Turkey contain fluid inclusions with very large ranges of homogenization temperatures that cannot be explained by mixing with cooler meteoric fluids. Our study provides evidence for the first time the presence of colloidal Au-Ag particles in epithermal fluids through their observation, using scanning electron microscopy (SEM), in primary fluid inclusions trapped during the different stages of growth of large quartz crystals. SEM cathodoluminescence (SEM-CL) was used to define the multiple growth stages of the quartz which were linked to different generations of largely primary fluid inclusions. Isotope studies by Bozkaya et al. (2016) show that the fluids in the mineralizing systems are magmatic-dominated and variations in δD and $\delta^{18}O$ are the result of equilibration of magmatic fluids with different alteration minerals at different temperatures.

GEOCHEMISTRY AND GEOECOLOGY OF MODERN LAKE SEDIMENTS OF URBANIZED AREAS IN THE NORTH AND ARCTIC OF RUSSIA

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The results of a study of urban lakes in the Northwestern region of Russia, including the Arctic zone, are presented. Key attention is paid to the influence of anthropogenic factors on the change in the chemical composition of water and sediments in urbanized water bodies. Data on the level of accumulation and distribution of heavy metals and other pollutants in modern lake sediments are shown. It was revealed that the main technogenic load on the lakes is associated with the activities of industrial enterprises and transport.

On the example of the lakes of the Murmansk region, technogenic mineral particles from the sediments of urban lakes were studied for the first time. In addition, a general analysis of the main fractions of heavy metals and other chemical elements in the studied sediments was carried out. The potential danger of migration of pollutants from surface sediments into water and organisms inhabiting lakes has been assessed.

The interaction of pollutants with hydrobionts (plankton, benthos, fish) from urban water bodies is shown. It was revealed that the anthropogenic load on lakes affects the change in the composition of diatoms, as well as the accumulation of pollutants in the organs of fish.

THE AVALON BIOTA OF THE VENDIAN: MYSTERIOUS CREATURES FROM THE ABYSS OR A SEDIMENTOLOGICAL CONSPIRACY?

Dmitriy V. Grazhdankin

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Water depth (or bathymetry) is a fundamental parameter of any subaquatic sedimentary environment. Most workers utilise (and combine) sedimentological, lithological, taphonomical, biological or chemical evidence and their typical association with specific water depths as observed in modern marine or lacustrine environments and apply these findings to fossil case settings. To what degree can we rely on physical (sedimentological) evidence alone when dealing with non-actualistic taphonomy or biology?

The Avalon fossil soft-bodied biota is the oldest (574–564 Ma) association of extinct macroscopic organisms, including the Earth's first animals from the Avalonia microcontinent (Newfoundland). This biota has been widely known due to the fact that it is confined to relatively deep-sea depositional environments as recorded in the Conception and St. John's groups. If the available reconstructions of depositional environments for the fossiliferous strata are taken into account, assuming the organisms are preserved within their habitats, even with the most careful estimates of the depositional environments, the Conception Group was deposited in deep-sea outer-fan and basin-plain settings under the influence of contour currents. Until recently, the Avalon fossil biota has been known from Newfoundland and Great Britain, which made it possible to consider this biota as endemic to the microcontinents of Avalonia. The discovery of the Avalon fossil biota in the Khatyspyt Formation of the Olenek uplift, Siberian Platform suggests that the emergence of deep-sea communities in the Vendian was a global event, and that rangeomorph and arboreomorph organisms formed communities similar in taxonomic composition and structure to communities in the shallower low energy environments of the inner shelf within the photic zone. Either the depth range of the Avalon biota extended from the relatively shallow inner shelf to the continental slope and basin-plain, which seems unlikely, or the depositional environments on the Avalonia microcontinent are convergent with deep-water settings. Palaeodepth reconstruction for deposition of the Conception Group is based solely on physical evidence: the predominance of turbidites in the sedimentary sequence, the presence of debris flow deposits, and the absence of structures produced by wave reworking. Similar sedimentary features characterise the Khatyspyt Formation, which is interpreted as a succession of debris-flow and suspension-flow deposits, with abundant macroalgal fossils suggesting deposition within the photic zone. Thus, if it was not for the sedimentary basin of the Khatyspyt Formation, we would hardly now begin to question the deep-water nature of the habitats of the Avalon biota. We reconstruct the depositional setting of the Khatyspyt Formation as a sediment-starved intracratonic basin. It was the subsidence-dominated sedimentation that determined the convergent similarity of the Khatyspyt Formation with deep-sea deposits.

CONTEMPORARY WELL LOGGING TECHNOLOGIES: FROM THEORY TO PRACTICE

Igor V. Mikhaylov

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The presentation covers the main research and development stages associated with an electromagnetic tool with toroidal coils for logging oil wells. The tool is intended to study the spatial distribution of electrical resistivity and its anisotropy in a thinly laminated geological section. We address the issues of theoretical justification, numerical simulation, laboratory prototyping, creation of borehole equipment and pilot tests.

Along with that, we consider the results of substantiating a novel transient electromagnetic technology for well logging and cross-borehole exploration as applied to oilfield and engineering geophysics. The conducted modelling made it possible to evaluate the capabilities of the technology and perform the optimal design of the sounding system configurations. Examples are given of tracing lateral heterogeneities of the Bazhenov Formation and monitoring the cryolithozone through transient electromagnetic sounding.

LITHOSPHERIC DEFORMATION AND POLARIZATION ANISOTROPY BENEATH THE ANATOLIAN PLATE

Gulten Polat

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Elastic anisotropy appears in many ways in the field of seismic waves. It affects the propagation of body and surface waves and the free vibration of the Earth. Seismic anisotropy is generally defined as the seismic velocity depending on the propagation direction or polarization of the waves because seismic waves produced by earthquakes are very sensitive to the varying elastic properties along their travel paths. A variety of factors from the large-scale (e.g., aligned faults, layering) to the small-scale (e.g., aligned cracks and crystals) causes seismic anisotropy. In recent years, seismic anisotropy is widely used to understand the dynamics of the Earth because seismic anisotropy is a ubiquitous feature of most geological materials.

It was recognized early on by seismologists that regions of the Earth's interior are anisotropic (e.g., Hess, 1964), and it is now clearly established that seismic anisotropy is present at several depth ranges in the Earth. For example, seismic anisotropy in many regions of the Earth's interior, including the crust, the mantle (particularly the upper mantle), the transition zone, the D'' layer, and the inner core, is detected by many researchers (e.g., Long and Silver, 2009).

Shear-wave splitting, one of the most effective tools to investigate seismic anisotropy, can identify the properties and the geodynamics of the upper mantle analysing core phases, such as SKS, SKKS and PKS. In order to investigate upper mantle anisotropy beneath the Anatolian Plate, we have measured shear wave splitting fast polarization directions and time-delays by using teleseismic waveforms recorded by Turkish broadband stations from 2005 to 2022. Stations in Eastern Anatolia display NE-SW fast directions, which are consistent with the direction of absolute plate motion. We also find that the average time-delay is slightly larger than 1.0 s. Particularly beneath Eastern Anatolia, the observed anisotropy might be a result of mantle flow that is driven by both plate motions and slab breakoff beneath the East Anatolian Accretionary Complex and widespread volcanic activity. However, stations in south and central Anatolia display NS fast directions, also with a time-delay of 1.0 s. Although the NS fast directions in south central Anatolia are fairly parallel to the extension direction in this region, we attribute this significant observation to the direction of mantle flow below a thin lithosphere. Interestingly, we observed that the average time-delays do not change from region to region. Only stations ISP and BALB show a variation of fast-polarization direction with back azimuth. We attribute this observation primarily to lateral variations in the seismic anisotropy beneath the Western Turkey Extensional Complex. The mantle flow to the East Anatolia Fault Zone reverts to the NE-SW flow in eastern and central Anatolia while we do not observe any relationship between mantle flow and the North Anatolian Fault Zone and Bitlis Suture Zone. The influence of local irregular topography on shear wave polarization at the recording stations is also investigated. At some stations (e.g., ADVT) we observed that local irregular topography seriously disturbs shear wave polarizations.

PACIFIC-TYPE CONVERGENT MARGINS

Inna Yu. Safonova

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Pacific-type convergent margins (PCM) and their related orogenic belts exist/form over subduction zones. PCM are places of major continental growth by island-arc juvenile magmatism and accretion, but they are also places of strong plate interactions and crust destruction. Accordingly there are two contrast types of PCM: accreting ones accompanied by the formation of accretionary complexes, and eroding ones accompanied by the tectonic erosion of accretionary wedge, fore-arc prism and volcanic arc and even by direct subduction of intra-oceanic arcs (Safonova et al., 2015; Safonova and Khanchuk, 2021). PCM are the only ways on the Earth surface to deliver surface materials to the deep mantle. The longer are the periods of tectonic erosion and subsequent subduction, the larger will be the volume of the material arriving to the mantle. Therefore, it is very important to highlight the periods of tectonic erosion in fossil PCMs to evaluate the amount of the surface material eroded in the past.

SPATIAL DATA INFRASTRUCTURE OF CENTRAL SIBERIAN GEOLOGICAL MUSEUM

Mikhail V. Zadorozhniy^{1,2}, E.M. Vysotsky^{1,2}, A.V. Vishnevsky¹, T.V. Smirnova¹, B.E. Moiseev²

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The experience of introducing a corporate geoportal into the work of the Central Siberian Geological Museum of the Institute of Geology and Mineralogy V.S. Sobolev SB RAS.

A modern cartographic platform makes it possible to consolidate a variety of spatial information: raster and vector maps, remote sensing data, materials of geological and geophysical observations, mining testing results. Hosting the software and geodatabase on a server enables remote work with controlled access to view and/or edit data through a browser and mobile application. The portal is also a cloud-based system for collecting, storing and processing geological, geochemical and genetic information on mineral deposits, and is used as a platform for interdisciplinary research. Availability of a mobile GIS client made it possible to develop a system of information support for field and cameral geological, geochemical and cartographic works. <https://mus.igm.nsc.ru/>



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SIB
ANTHRACITE
GROUP

Joint Stock Company "Siberian Anthracite"



Joint Stock Company «Almazy Anabara»



Data East, LLC



Public Joint Stock Company Gazprom Neft



Laboratory of ore-forming systems IGM SB RAS



SGA Siberian Student Chapter

