

XXIII International Conference on Data Analytics and Management in Data Intensive Domains – Preliminary Program

Time	Event
9:00-10:30 (Moscow time)	Registration time. Check connections.
10:30-10:45	Ceremony of Opening of the Workshop
	Session “Machine Learning for Materials Science”
10:45-11:05	Yi Liu (Shanghai University) Machine Learning Accelerated Multicomponent Alloy Design
11:05-11:25	Nadezhda N. Kiselyova (IMET RAS); Victor A. Dudarev (NRU HSE); Andrey V. Stolyarenko (IMET RAS) Machine Learning Application to Predict New Inorganic Compounds – Results and Perspectives
11:25-11:45	Matteo Baldoni; Fabio Le Piane; Francesco Mercuri (CNR-ISMN) Artificial intelligence, machine learning and data-enabled multiscale simulation workflows for the design and development of molecular materials
11:45-12:05	Jakob Ropers, Marco M. Mosca, Olga Anosova, Vitaliy Kurlin, and Andrew I. Cooper (University of Liverpool) Fast predictions of lattice energies by continuous isometry invariants of crystal structures
12:05-12:25	Faridun Jalolov; Artem Oganov; Alexander G Kvashnin (Skolkovo Institute of Science and Technology) Simulations of mechanical properties of materials by using machine learning interatomic potentials
12:25-12:40	Break
12:40-13:25	Johan Bratberg, Vice President, Thermo-Calc Software AB The role of CALPHAD-bases tools in filling the materials data gaps for materials 4.0.
	Session “Databases on Properties of Substances and Materials”
13:25-13:45	Toshihiro Ashino (Toyo University); Nobutaka Nishikawa (Mizuho Research & Technologies, Ltd.); Masahiko Demura (National Institute for Materials Science (NIMS)); Takuya Kadohira (NIMS) Implementation of Materials Data Integration using Ontology
13:45-14:05	Fabio Le Piane (ISMN-CNR); Matteo Baldoni (ISMN-CNR); Mauro Gaspari (University of Bologna); Francesco Mercuri (ISMN-CNR) Molecular and Materials Basic Ontology: development and first steps
14:05-14:25	Martin T. Horsch (High Performance Computing Center Stuttgart (HPCCS)); Taras Petrenko (HPCCS); Volodymyr Kushnarenko (HPCCS); Björn Schembera (HPCCS); Bianca Wentzel (Fraunhofer Institute for Open Communication Systems (FIOCS)); Alexander Behr (TU Dortmund); Norbert Kockmann (TU Dortmund); Sonja Schimmler (FIOCS); Thomas Bönisch (HPCCS) Interoperability and architecture requirements analysis and metadata standardization for a research data infrastructure in catalysis
14:25-15:10	Lunch
15:10-15:30	Victor A. Dudarev; Sergey Babikov (NRU HSE) Searching for an Optimal Data Platform for Relevant Information Search in Inorganic Chemistry and Materials Science
15:30-15:50	Reetu Elza Joseph (Karlsruhe Institute of Technology (KIT)); Aditya Chauhan (KIT); Catriona Eschke (Helmholtz-Zentrum Hereon); Ahmad Zainul Ihsan (Forschungszentrum Jülich); Mehrdad Jalal (KIT); Ute Jäntsche (KIT); Nicole Jung (KIT); C. N. Shyam Kumar (CEA Saclay); Christian Kübel (KIT); Christian Lucas (Helmholtz-Zentrum Hereon); Matthias Mail (KIT); Andrey Mazilkin (KIT); Charlotte Neidiger (KIT); Mirco Panighel (Consiglio Nazionale delle Ricerche - Istituto Officina dei Materiali); Stefan Sandfeld (Forschungszentrum Jülich); Rainer Stotzka (KIT); Richard Thelen (KIT); Rossella Aversa (KIT)

	Metadata Schema to support FAIR Data in Scanning Electron Microscopy
15:50-16:00	Break
	Session “Computational Materials Science”
16:00-16:20	Alexander G. Kvashnin (Skolkovo Institute of Science and Technology (SIST)); Dmitry Rybkovskiy (SIST); Vladimir Filonenko (High Pressure Physics Institute (HPPI)); Vadim Brazhkin (HPPI); Artem Oganov (SIST) Computational prediction, Synthesis, Properties, and Crystal Structure of WB5-x
16:20-16:40	Alexey L. Voskov (Lomonosov Moscow State University) Usage of Robust Regression for Approximation of Thermodynamic Data
16:40-17:00	Tao Fan (Skolkovo Institute of Science and Technology) AICON2: A program for calculating transport properties quickly and accurately
17:00-17:20	Closing Ceremony

WEDNESDAY, OCTOBER 27	
Time	
10.45-11.00	Opening of the Conference
11.00-12.00	KEYNOTE Construction of Integrated Materials Data System for Data-driven Materials Research Yibin Xu (National Institute for Materials Science, Japan) (Chair: Nadezhda Kiselyova (IMET RAS))
12.30-14.10	SESSION C1 Conceptual modeling, Data Integration, Ontologies and Applications (Chair: Sergey Stupnikov (FRC CSC RAS))
12.30-12.50	A Needs-Based Augmented Reality System Concept. Manal A. Yahya; Ajantha Dahanayake (Lappeenranta University of Technology)
12.50-13:10	Response to cybersecurity threats of informational infrastructure based on conceptual models. Nikolay Kalinin (MSU); Nikolay A. Skvortsov (FRC CSC RAS)
13:10-13:30	Prospects for the evolution of the Russian segment of the Virtual Atomic and Molecular Data Center (VAMDC). Alexey Akhlyostin; Nikolay Lavrentiev; Alexey Privezetsev; Alexander Z. Fazliev (IAO SB RAS)
13:30-13:50	On a Conceptual Data Model with Orientation to Data Integration. Manuk G. Manukyan (Yerevan State University)
13:50-14:10	Towards a Recommender System for the Choice of the Universal Decimal Classification Code for Mathematical Articles. Olga A. Nevzorova; Damir Almukhametov (Kazan Federal University)
14.10-14.30	Break
14.30-16.00	SESSION C2 Problem Solving Architectures and Infrastructures, Experiment Organization (Chair: Alexey Mitsuk (National Research University Higher School of Economics))
14.30-14.50	A Survey of Big Data Pipeline Orchestration Tools from the Perspective of the DataCloud Project. Mihhail Matskin (KTH Royal Institute of Technology, Computer Science)*; Shirin Tahmasebi (KTH Royal Institute of Technology, Computer Science); Amirhossein Layegh (KTH Royal Institute of Technology, Computer Science); Amir H. Payberah (KTH Royal Institute of Technology); Aleena Thomas (SINTEF); Nikolay Nikolov (SINTEF); Dumitru Roman (SINTEF)
14.50-15:10	A FAIR Problem-Solving Lifecycle Architecture. Nikolay A. Skvortsov (FRC CSC RAS)
15:10-15:30	Comparison of Data-Driven Approaches to Modeling Complex Behavior of 2D Liquid Simulator. Dmitry Kovalev (Aramco Innovations LLC); Dmitry Khliustov (MSU); Sergey Safonov (Aramco Innovations LLC)

15:30-15:50	MLDev: Data Science Experiment Automation and Reproducibility Software. Anton Khritankov; Nikita Pershin; Nikita Ukhov; Artem Ukhov (MIPT)
15:50-16:10	Break
16:10-18:10	SESSION C3 Machine Learning Applications (Chair: Mikhail Melnikov (Research Institute of Molecular Biology and Biophysics, Novosibirsk))
16:10-16:30	Predicting the increase in postoperative motor deficits in patients with supratentorial gliomas using machine learning methods. Alexandra Kosyrkova (NMRCN MHRF), Eugene Ilyushin (MSU), Daniel Saada (MSU), Ramin Afandiev, Alexander Baev, Eudard Pogosebkyan, Vladimir Okhlopkov, Gleb Danilov, Artem Batalov, Igor Pronin, Natalia Zakharova, Anna Ogurtsova, Alexander Kravchuck, David Pitskhelauri, Alexander Potapov, Sergey Goryaynov (NMRCN MHRF)
16:30-16:50	Social Network Analysis of the Professional Community Interaction - Movie Industry Case. Ilia Karpov; Roman Marakulin (HSE University)
17:10-17:30	The Analysis of Trajectories in Moscow Subway. Mariia Nekraplonna; Dmitry Namiot (MSU)
17:30-17:50	Multi-Modal Human Cognitive State Recognition during Reading. Nikita Filimonov (MSU) [PhD WS]
18.00-20.00	Coordinating Committee Meeting
THURSDAY, OCTOBER 28	
Time	
11.00-12.00	KEYNOTE The Role of the Human Expert in the Era of Big Data Emille E. O. Ishida (CNRS/Laboratoire de Physique de Clermont (LPC), Université Clermont-Auvergne (UCA), Clermont Ferrand, France) (Chair: Alexey Pozanenko (Space Research Institute, RAS))
12.30-14.00	SESSION C4 Data Analysis in Astronomy I (Chair: Alina Volnova (Space Research Institute, RAS))
12.30-12.50	Pipeline for detection of transient objects in optical surveys. Nicolai Pankov (HSE University, SRI RAS), Alexei Pozanenko (HSE University, SRI RAS), Vladimir Kouprianov (University of North Carolina at Chapel Hill, The Central Astronomical Observatory of the Russian Academy of Sciences at Pulkovo), Sergey Belkin (HSE University, SRI RAS)
12.50-13:10	Application of machine learning methods for cross-matching astronomical catalogs. Alexandra A Kulishova (MSU), Dmitry Briukhov (FRC CSC RAS)
13:10-13:30	Clustering stellar pairs to detect extended stellar structures. Sergei Sapozhnikov (INASAN) [PhD WS]
13:30-13:50	Cross-matching of large sky surveys and study of astronomical objects apparent in ultraviolet band only. Aleksandra Avdeeva (INASAN); Sergey Karpov (Institute of Physics, Czech Acad. Sci.); Oleg Yu. Malkov (INASAN); Gang Zhao (Key Laboratory of Optical Astronomy, National Astronomical Observatories, Chinese Academy of Sciences)
13.50-14.30	Break
14.30-16.00	SESSION C5 Data Analysis in Astronomy II (Chair: Oleg Malkov (Institute of Astronomy, RAS))
14.30-14.50	Host galaxies of cosmic gamma-ray bursts. Alina Volnova (SRI RAS); Alexey Pozanenko (SRI RAS); Sergey Belkin (HSE University)
14.50-15:10	The diversity of light curves of SNe associated with gamma-ray bursts. Sergey Belkin (HSE University); Alexey S. Pozanenko (SRI RAS)

15:10-15:30	VALD in astrophysics. Yury V Pakhomov, Tatiana Ryabchikova (INASAN)
15:30-15:50	Star clusters, planets, asteroids and comets in the light of Big Data. Maria Sizova; Sergei Vereshchagin; Aleksandr Tutukov (INASAN); Andrei Fionov (OCRV Russian Railway)
15:50-16:10	Break
16:10-18:00	SESSION C6 Data Analysis in Earth Sciences, Advanced Data Analysis Methods (Chair: Bernhard Thalheim (University of Kiel))
16:10-16:30	On the development of a pipeline for processing hydrometeorological data. Evgenii D. Viazilov, Denis A. Melnikov, Alexander S. Mikhchev (RIHMI-WDC)
16:30-16:50	Image recognition for large Soil Maps Archive overview: metadata extraction and georeferencing tool development. Nadezda A. Vasilyeva; Artem Vladimirov; Taras Vasiliev (Dokuchaev Soil Science Institute)
17:10-17:30	Evolutionary Approach to Multimodal Clustering on Formal Contexts. Mikhail Y Bogatyrev; Sergey Dvoenko, Dmitry Orlov; Tatyana Shestaka (Tula State University)
17:30-17:50	Distances Parameterized by Size: Models and Adaptation Techniques. Archil I. Maysuradze; Daria Petrenko (MSU)
17:50-18:10	Models Of Decision Making With Limited Volume Of Processed Information. V. I. Budzko, M. A. Gorelov, F. I. Ereshko (FRC CSC RAS)
FRIDAY, OCTOBER 29	
Time	
11.00-12.00	KEYNOTE Melbourne Data Analytics Platform Andrew Turpin Melbourne Data Analytics Platform (Chair: Eva Mendez (Universidad Carlos III de Madrid))
12.30-14.10	SESSION C7 Information extraction from texts I (Chair: Boris Dobrov (Research Computing Center of M.V.Lomonosov Moscow State University))
12.30-12.50	Domain-specific Taxonomy Enrichment based on Meta-Embeddings. Mikhail Tikhomirov; Natalia V Loukachevitch (MSU)
12.50-13:10	Extracting Sentiments towards COVID-19 Aspects. Eduard Nugamanov; Natalia Loukachevitch; Boris Dobrov (MSU)
13:10-13:30	Cross-lingual plagiarism detection method. Denis Zubarev (FRC CSC RAS, MSU); Ilya Tikhomirov (Russian Science Foundation); Ilya V Sochenkov (HSE University, FRC CSC RAS, MSU)
13:30-13:50	n approach to processing news text messages based on markeme analysis. Alexander V. Sychev (Voronezh State University)
13.50-14.10	Break
14.10-15.45	SESSION C8 Information extraction from texts II (Chair: Natalia Loukashevitch (Lomonosov MSU))
14.10-14.30	Methods for automatic argumentation structure prediction. Ilya Dimov; Boris V Dobrov (MSU)
14.30-14.50	Improving Neural Abstractive Summarization with Reliable Sentence Sampling. Daniil Chernyshev; Boris V Dobrov (MSU)
14.50-15:10	Search query extension semantics. Olga Ataeva, Vladimir Serebryakov, Natalia Tuchkova (FRC CSC RAS)
15:10-15:30	Development of Methods for Extracting Information from Pharmacy Line Using Conditional Random Fields. Alexey I. Molodchenkov, Artem A. Nikolaev, Evgenia

	A. Mitrokhina (FRC CSC RAS)
15:30-16:00	Break
16:00-17:10	SESSION C9 Scientific and Educational Texts Analysis (Chair: Valery Sokolov (Yaroslavl State University))
16:10-16:25	A system for information extraction from scientific texts in Russian. Elena Bruches; Anastasia Mezentseva; Tatiana V Batura (NSU)
16:25-16:40	Development of Lexico-Syntactic Ontology Design Patterns for Information Extraction of Scientific Data. Kristina Ovchinnikova (Novosibirsk State University), Irina Kononenko, Elena Sidorova (A. P. Ershov Institute of Informatics Systems SB RAS)
16:40-16:55	Dask based efficient clustering of educational texts. Fail Gafarov; Dmitriy Minullin (Kazan Federal University); Viliuza Gafarova (Institute of Applied Semiotics, Tatarstan Academy of Sciences)
16:55-17:10	Cognitive processes in generating and restoring elliptical sentences. Xenia A. Naidenova (S. M. Kirov Military Medical Academy, Saint-Petersburg)
17:10-17:20	Break
17:20-18:05	SESSION C10 Methods and Tools for Literary Texts Analysis (Chair: Nikolay Skvortsov (FRC CSC RAS))
17:20-17:35	Analyzing the cultural universals of the Folklore of Peoples of Siberia and the Far East. Anna A. Grinevich (Institute of Philology SB RAS); Alexey Sery (A.P. Ershov Institute of Informatics Systems, Siberian Branch of the Russian Academy of Sciences)
17:35-17:50	Using a decision tree to identify non-uniform fragments in a text. Alexander Rogov; Kirill Kulakov; Nikolai Moskin; Roman Abramov (Petrozavodsk State University)
17:50-18:05	Technological features of cross-language migration from PHP to Python of software products working with intensive data. Vladimir B Barakhnin (FRC ICT); Olga Kozhemyakina (ICT SB RAS); Artem Revun (FRC ICT); Natalia Shashok (NSU)
18:05-19:00	Closing of the Conference

Regular talk is 20 min. length, short talk marked by star (*) is 15 min. length.

Abbreviations

CNR-ISMN	Consiglio Nazionale delle Ricerche, Institute of Nanostructured Materials
FRCCSC RAS	Federal Research Center "Computer Science and Control" of the Russian Academy of Sciences
FRC ICT	Federal Research Center for Information and Computational Technologies
FIOCS	Fraunhofer Institute for Open Communication Systems
HSE	Higher School of Economics
HPPI	High Pressure Physics Institute
HPCCS	High Performance Computing Center Stuttgart
IMET RAS	A. A. Baikov Institute of Metallurgy and Materials Science of Russian Academy of Sciences
INASAN	Institute of Astronomy of the Russian Academy of Sciences
KIT	Karlsruhe Institute of Technology
KFU	Kazan Federal University
MIPT	Moscow Institute of Physics and Technology
MSU	Lomonosov Moscow State University
NIMS	National Institute for Materials Science

NMRCN MHRF	N. N. Burdenko National Medical Research Center of Neurosurgery of the Ministry of Health of the Russian Federation
NSU	Novosibirsk State University
RIHMI-WDC	All-Russia Research Institute of Hydrometeorological Information - World Data Center
SIST	Skolkovo Institute of Science and Technology
SINTEF	https://www.sintef.no/
SB RAS	Siberian Branch of the Russian Academy of Sciences
SRI RAS	Space Research Institute of the Russian Academy of Sciences
STFC	Science and Technology Facilities Council, UK