Announcement of the 2024 International Conference on Great Lakes Research

Lake Eco-environmental Conservation and Sustainable Development in Great Lake Basins

Conference Guide

September 22-24, 2024 | Atyrau Oil & Gas University, Atyrau, Kazakhstan

ATYRAU OIL AND GAS UNIVERSITY

Co-Organizer: Xinjiang Association for Science and Technology

National Academy of Science Republic of Kazakhstan

National Academy of Agrarian Sciences of the Republic of Kazakhstan

The Kazakh State Agrarian Research University

Xinjiang Branch Chinese Academy of Sciences

Key Laboratory of Poyang Lake Wetland and Watershed Research (Jiangxi Normal University), Ministry of Education

School of Geography and Environment, Jiangxi Normal University

Atyrau Oil & Gas University

Zhejiang University of Technology

A Content

Content

01 Preface

Due to increasing human activities and global changes, lakes worldwide are facing numerous challenges, including sediment accumulation, altered hydrological regime, toxic substance pollution, eutrophication, declining fishery resources, loss of biodiversity, ecosystem degradation, and tense human-lake relationships. Addressing these issues requires the collective wisdom of global lake researchers.

To gather global insights on lake conservation and utilization, and to stimulate new ideas and exchange innovative practices, Jiangxi Normal University proposes the organization of the International Conference on Great Lakes Research and the establishment of the International Forum for Great Lakes Research. An advisory committee for this forum has been established, with Professor Xi Chen, Xinjiang institute of Ecology and Geography, Chinese Academy of Sciences, serving as the chairman of the advisory committee, Professor Lin Hui as the general secretory. The committee comprises 32 experts from around the world specializing in lake and basin research.

This forum is committed to promoting interdisciplinary integration through long-term monitoring, scientific research, technological demonstrations, and knowledge sharing. The ultimate goal is to achieve the health of lake ecosystems, sustainable economic prosperity, and harmonious human-nature relationships within lake regions, which can contribute to the achievement of the United Nations Sustainable Development Goals (SDGs) on a lake and basin scale.

01 Preface

The 2023 conference was held at the Poyang Lake, the largest lake in China, and we will hold the 2024 conference at the Caspian Sea, the largest lake in the world. The Caspian Sea is located at the boundary of Europe and Asia, with an area of about 400,000 square kilometers, bordering five countries, namely Russia, Kazakhstan, Azerbaijan, Iran and Turkmenistan. This conference will be held in Atyrau, the oil city of the Caspian Sea in Kazakhstan, which will enable the delegates of the conference to enjoy the magnificent scenery of the Caspian Sea and the boundary line between Europe and Asia. This conference will focus on the following research directions for academic presentations: hydrology and water environment, watershed water resources management, environmental dynamic monitoring, ecosystem health assessment, ecological warning platform construction, environmental pollution prevention and control, ecological restoration and reconstruction, biodiversity conservation, sustainable development and utilization of lake resources, lake basin ecological economy and green development, watershed governance and comprehensive management.

02 Organization

Executive organizers:

- Xinjiang Branch Chinese Academy of Sciences
- Key Laboratory of Poyang Lake Wetland and Watershed Research (Jiangxi Normal University), Ministry of Education
- School of Geography and Environment, Jiangxi Normal University
- Atyrau Oil & Gas University

Co-organizers:

- Xinjiang Association for Science and Technology
- National Academy of Science Republic of Kazakhstan
- National Academy of Agrarian Sciences of the Republic of Kazakhstan
- The Kazakh State Agrarian Research University
- Zhejiang University of Technology

Forum Committee

Co-chairs

Xi Chen
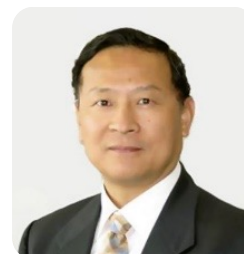Xinjiang Branch Chinese Academy of Sciences

Gulzada Shakulikova
Atyrau Oil & Gas University

Hui Lin
Jiangxi Normal University

Members

Rinat Iskakov, Atyrau Oil & Gas University

Wenjiang Liu, Xinjiang Institute of Ecology and Geography, CAS

Yong Ge, Jiangxi Normal University

Jin Luo, Jiangxi Normal University

Chaoyang Fang, Jiangxi Normal University

Wenjing Yang, Jiangxi Normal University

Lizhi Tao, Jiangxi Normal University

Zhongfu Wang, Jiangxi Normal University

Rinat Iskakov, Atyrau Oil & Gas University, Kazakhstan

Professor Rinat Iskakov is vice-rector of Atyrau Oil&Gas University and professor at the Kazakh National Research Technical University named after K. Satpayev. Completed projects (in chronological order) 2004-2007 - Project NATO SFP972813, for the development of self-healing coatings for space solar panels with Catalyse Sarl; 2007-2009 - Project ISTC K-1117, for the development of metallized polymeric materials for space and flexible solar cells; 2007 - 2015 - PolyAB Ltd for the implementation of the production of flexible polymer chips based on polyimide films; 2009-2011 - NATO SfP982813 project, for the creation of metal-polymer structural materials with surface metallic properties and light specific gravity; 2010-2012 - Kazakhstan Maritime Academy KBTU; 2014-2016 - project P.055.101.2. containing polymeric materials with the potential of ionic conductivity of lithium cations"; 2018-2020 - Project BR05236302 Scientific and technical substantiation of innovations in the chemical cluster in the field of creating new materials and technologies to improve the efficiency and environmental sustainability of industrial production

Rinat Iskakov

Qingyun Duan, Hohai University, China

Prof. Qingyun Duan is currently the Editor-in-Chief of *Reviews of Geophysics*. His research interests include the development of land surface hydrological models, hydrometeorological ensemble forecasting methods, soil-plant-atmosphere interaction mechanisms, the impact of climate change on water resources, and uncertainty analysis methods for complex systems. He has held leadership roles in several international academic organizations, including being a founding leader of the American Geophysical Union (AGU) College of Fellows. In 2012, he was elected as a Fellow of the American Geophysical Union; in 2015, he was elected as a Fellow of the American Meteorological Society; in 2018, he received the Outstanding Hydrological Lecture Award from the Asia-Oceania Geosciences Society; in 2021, he was awarded a Fellowship by the international scientific organization Vebleo; in 2023, he was elected as the Chair of the Hydrology Division of the Asia-Oceania Geosciences Society.

Qingyun Duan

Vladimir Bocharnikov

Vladimir Bocharnikov, Pacific Geographical Institute, Russian Academy of Sciences, Russia

Prof. Vladimir Bocharnikov is currently a Leading Researcher in Wildlife Ecology and Conservation Laboratory at Pacific of Institute of Geography Far Eastern Branch Russian Academy of Sciences of Ministry of Science and Higher Education. He holds a PhD in Ecology from Pacific Institute of Geography Russian Academy of Sciences, Vladivostok (Russian Federation) in 1992, and Professor of Tourism and Hospitality Service (2005) from Vladivostok State University of Economics and Service. Current research interests have including a broad thematic in Geography, Ecology, Environmental Science, AI and Tourism, Biodiversity, Sustainable Development etc. He has supervised over 130 graduate students at B.C. and Ms. Levels, 4 as Ph.D. He has coordinated more than 35 International expeditions and projects, participated at 30 grants in above mentioned fields. He has more than 550 publications, including 30 monograph chapters and author's books.

Anthony Gidudu

Anthony Gidudu, Makerere University, Uganda

Anthony Gidudu is currently an Associate Professor in the Department of Geomatics and Land Management at Makerere University in Kampala, Uganda, where he also serves as the Dean of the School of the Built Environment. He holds a PhD in Geomatics from the University of Cape Town in South Africa, after which he did his postdoc at the University of the Witwatersrand in Johannesburg, South Africa. His research interests have involved leveraging earth observation for land cover mapping, air pollution monitoring, water quality monitoring, greenhouse gas monitoring, habitat assessment etc. He has supervised over 50 graduate students at PhD and Masters level. He has also coordinated several projects, the most recent being the Education Lead for the Regional Center for Mapping of Resources for Development RCMRD/GMES and Africa Consortia. This is a European Union funded project through the African Union which seeks to promote the use of Earth Observation to address African Societal Challenges.

04 Program Overview

Date: September 22 (Sunday)	
9:00-18:00	Registration
18:00-20:00	Dinner

| Date: September 23 (Monday)	
	Welcome speech session (Chair: Prof. Rinat Iskakov)
9:00-9:10	Prof. Gulzada Shakulikova, Rector of Atyrau Oil & Gas University, Kazakhstan
9:10-9:20	Prof. Xi Chen, Xinjiang Branch Chinese Academy of Sciences, China
9:20-9:30	Prof. Hui Lin, Jiangxi Normal University, China
9:30-9:40	Photo session
	Keynote session 1 (Chair: Prof. Hui Lin)
9:40-10:00	Scientific problems of water management in the Northern Caspian region Keynote speaker: Prof. Rinat Iskakov, Atyrau Oil & Gas University, Kazakhstan
10:00-10:20	Best management practice of lake water quality based on a highly efficient multi-objective method - A case study in the four-lake region in Hubei, China Keynote speaker: Prof. Qingyun Duan, Hohai University, China
10:20-10:40	Coffee break
	Keynote session 2
10:40-11:00	Big lakes importance and its civilization importance Keynote speaker: Prof. Vladimir Bocharnikov, Pacific Geographical Institute, Russian Academy of Sciences, Russia
11:00-11:20	Leveraging earth observation in monitoring water quality on Lake Victori Keynote speaker: Prof. Anthony Gidudu, Makerere University, Uganda
	Report session 1 (Chair: Prof. Vladimir Bocharnikov)
11:20-11:35	Propagation from meteorological to hydrological droughts in central Asia Speaker: Prof. Qiming Zhou, Hong Kong Baptist University, China
11:35-11:50	Assessment of water resources of Uzbekistan in the context of climate change and water scarcity Speaker: Prof. Khusen Gafforov, Scientific Research Institute of Irrigation and Water Problems, Uzbekistan
11:50-13:30	Lunch

|	Report session 2 (Chair: Prof. Khusen Gafforov)
13:30-13:45	Dynamic change of global lake depth and water volume using machine learning and multiple datasets Speaker: Prof. Li Jia, Aerospace Information Research Institute, Chinese Academy of Sciences, China
13:45-14:00	Urmia Lake drying up and restoration: from satellite images perspectives Speaker: Prof. Behdad Chehrenegar, Urmia Lake Research Program, Sharif University of Technology, Iran
14:00-14:15	Satellite remote sensing of global large lakes: opportunities and challenges Speaker: Prof. Hongtao Duan, Nanjing Institute of Geography and Limnology, Chinese Academy of Sciences, China
14:15-14:30	Remote sensing of lake and river ice over cold regions Speaker: Prof. Guoqiang Jia, Aerospace Information Research Institute, Chinese Academy of Sciences, China
14:30-14:45	A new technique for mapping algal blooms, floating/emergent and submerged aquatic vegetation in eutrophic lakes Speaker: Prof. Juhua Luo, Nanjing Institute of Geography and Limnology, Chinese Academy of Sciences, China
14:45-15:00	Response of microbial diversity and composition in sediments to Cyanobacteria bloom in Taihu Lake Basina Speaker: Dr. Lu Xia, Nanjing University Ecology Research Institute of Changshu, China
15:00-15:15	Monitoring and risk analysis of locust plagues in Tajikistan based on remote sensing and ground investigation of locust breeding environment Speaker: Dr. Bo Sun, Shenzhen Institute of Advanced Technology, Chinese Academy of Sciences
15:15-15:35	Coffee break
15:35-17:30	Roundtable meeting (Chair: Prof. Behdad Chehrenegar)
17:30-18:00	Closing ceremony (Chair: Prof. Xi Chen)
18:00-20:00	Welcome dinner
Date: September 24 (Tuesday)	
9:00-15:00	Caspian Sea field trip
18:00-20:00	Dinner

CASPIAN DIMENSION

The Caspian Sea is the world's largest inland body of water, often described as the world's largest lake and sometimes referred to as a full-fledged sea.it lies between Europe and Asia east of the Caucasus, west of the broad steppe of Central Asia, south of the fertile plains of Southern Russia in Eastern Europe, and north of the mountainous Iranian Plateau. It covers a surface area of 371,000 km2 (143,000 sq mi) (excluding the highly saline lagoon of Qarabogazköl to its east), an area approximately equal to that of Japan, with a volume of 78,200 km3 (19,000 cu mi).It has a salinity of approximately 1.2% (12 g/L), about a third of the salinity of average seawater. It is bounded by Kazakhstan to the northeast, Russia to the northwest, Azerbaijan to the southwest, Iran to the south, and Turkmenistan to the southeast.

Atyrau is a transcontinental city, at the mouth of the Ural River on the Caspian Sea, between Europe and Asia, located at the North Caspian region. Atyrau is a harbour city 50 km away Sea shore, at the delta of the Ural River. Atyrau city is approximately 25 metres (66 feet) below sea level. The city is considered to be located both in Asia and Europe, as it is divided by the Ural River. The city is a hub for the oil-rich Caspian Depression; because of this, many oil wells have been drilled in the Tengiz Field onshore and Kashagan Field offshore areas.
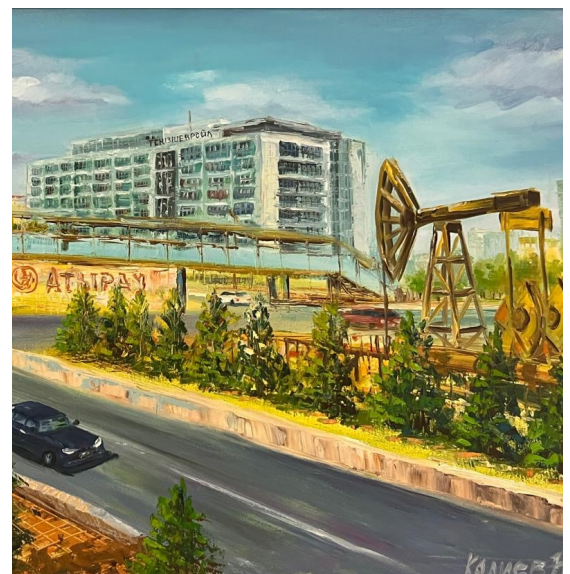
CITY MAP
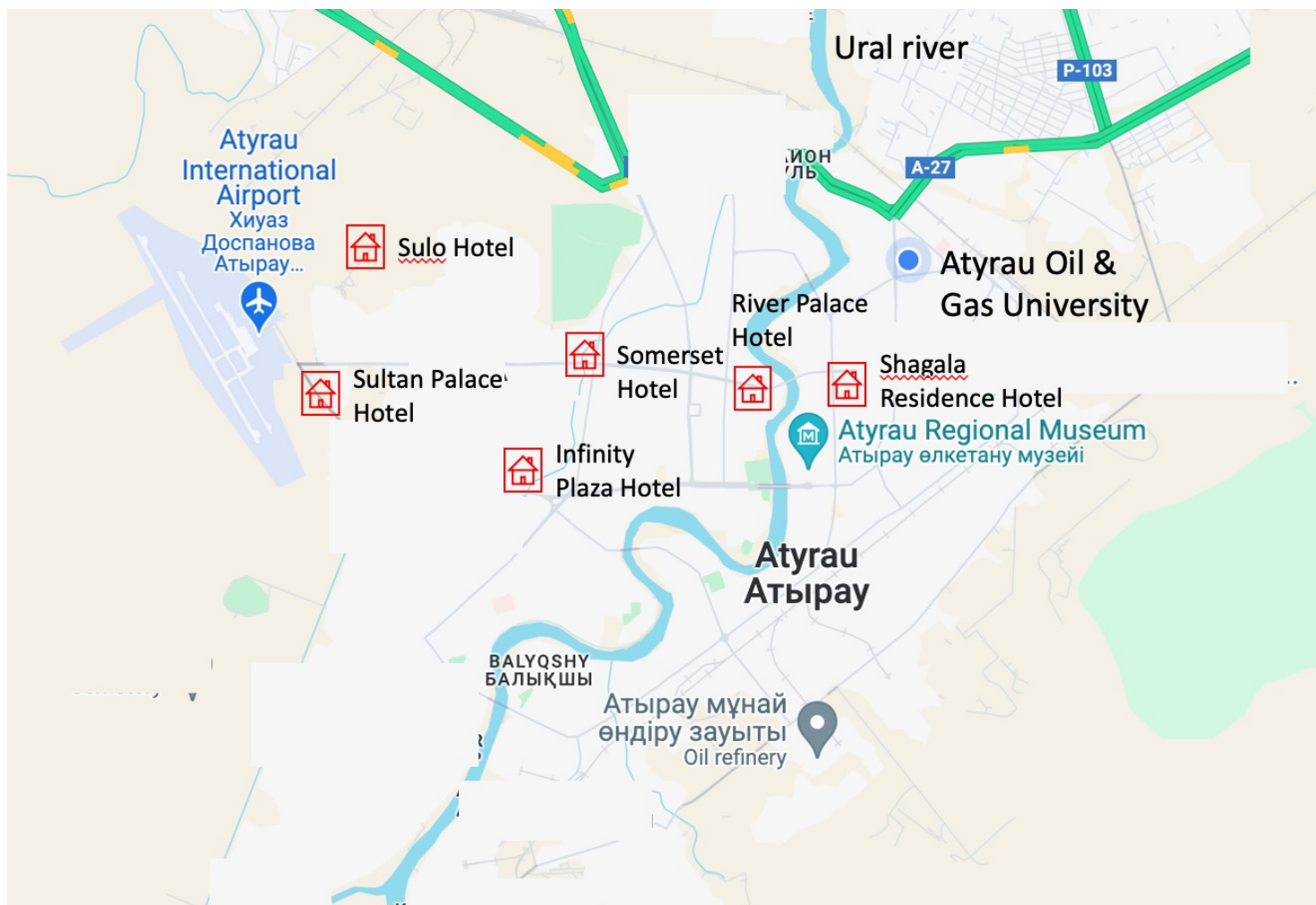
WEATHER

the weather in Atyrau in september is **dry**; it hardly ever rains (1.5 cm/0.6 in of rainfall over a day). The climate pleasant in that area September. Temperatures are up to 24°C (76°F) past the midnight and in the morning the temperature drops to 17°C (63°F). Thus, the mean temperature average on this month of september in Atyrau is 20°C (70°F).

Forecast
September 22 day 24°C, night 12°C, cloudy
September 23 day 24°C, night 12°C, cloudy
September 24 day 23°C, night 11°C, cloudy

Download CITY GUIDE BOOK

CAMPUS MAP

Bajmukhanov Street

Amandosov Street

ATYRAU OIL AND GAS UNIVERSITY

The whole campus is free smoking area. Please see the only designated zone for smoking

NO SMOKING AREA

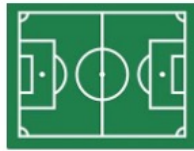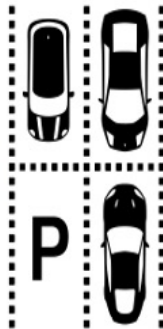Limited VIP car entrance
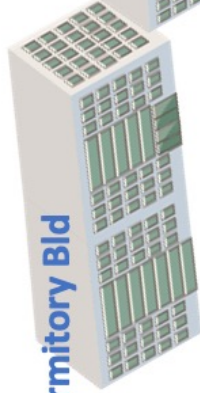
Academic Bld

Creative Centre

Sport Facilities

Academic Bld

Administrative Bld

Otebayev monument

Balgimbayev Bld

Great Lake Research Forum

Petroleum Bld

СӨТБАЕВ АТЫНДАҒЫ АТЫРАУ МҰНАЙ ЖӘНЕ ГАЗ УНИВЕРСИТЕТІ

Main entrance

Dormitory Bld

P

P
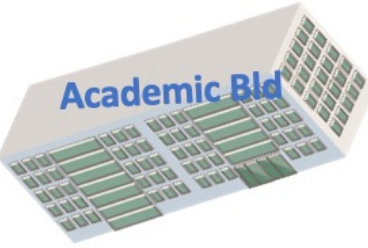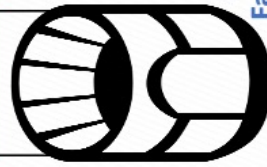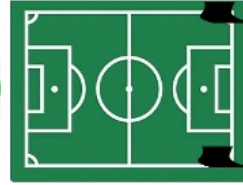
Car/Bus entrance to parking lots