IRQUA

Iranian Quaternary Association

3rd International

Conference on Quaternary Sciences, Iran, Tehran 2024

29 January-February 1, 2024

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First Circular

It is our great pleasure to invite and welcome you to Tehran for the 3rd International Conference on Quaternary Sciences, organized by the Iranian Quaternary Association (IRQUA), Research Institute for Earth Sciences (RIES), and the Geological Society of Iran (GSI) from January 29 to February 1, 2024. This conference in hybrid form (in-person and online) with a full scientific program, field trips and workshops will provide a platform for presenting the state-of-the-art research on Quaternary science in Iran and elsewhere, and a unique opportunity for networking and collaboration.

The IRQUA international conference generally takes place every 2 years and offers a diverse program around five main themes that are critical in understanding the ongoing societal and climate challenges. We welcome all contributions to improve our understanding of the relationship between the different natural and anthropogenic factors and processes that shape the Quaternary environment, landscape, and climate, human evolution and ancient civilizations. We are convinced that the 3rd International IRQUA Conference will inspire many new ideas, foster new collaborations and increase our knowledge of Quaternary science, and for those who will participate in person, a lasting memory of the Iranian hospitality and wonderful landscape.

Iranian Quaternary Association

Research Institute of Earth Sciences	Geological Survey of Iran	Applied Geological Research Center of Iran
Institute of Geography University of Tehran	CIVILICA	Commission of Scientific Associations of Iran
Islamic World Science citation center	UNESCO Chair on Coastal Geo-Hazard Analysis	Tarbiat Modares University
Gorgan University of Agricultural Sciences and Natural Resources	Ministry of Science, Research and Technology	Iranian Association of Geomorphology

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Aims

Quaternary sciences play a critical role in contributing the necessary knowledge to face current societal challenges and to mitigate the ongoing climate change. To this end, the IRQUA aims to convene the Iranian and international Quaternary scientists to present their work and discuss the processes and mechanisms that shaped the landscape, environments, civilizations and ecosystems of the past 2.5 million years.

The IRQUA aims to exchange research interests on global and regional scale and promote interdisciplinary studies in Quaternary science. The meeting will consist of various interconnected sessions covering paleoclimate and paleoceanography, geomorphology, soil system sciences, natural hazards, stratigraphy, sedimentology and paleontology, and archeology.

The meeting will foster greater collaborations to lead to solutions in all fields of Quaternary science, and to share and engage the science community, policymakers and stakeholders. We hope to see you in this meeting of action and collaboration.

Subjects

- **Climate records and models**

All contributions related to paleoclimatic and paleogeographic changes in marine and terrestrial systems, abrupt and long-term climate change, historical and future climate, the use and development of (novel) climate proxies, simulations of past and future climate

- **Human evolution and ancient civilizations**

All contributions related to anthropology, archeology, ancient civilizations, population dynamics and behavioral variability, cultural diversity, human-environment interaction, cultural-climatic evolution, vegetation, land-use and human impact

- **Landforms and soil system sciences**

All contributions related to fluvial, estuarine and coastal geomorphology, lake- and sea-level changes, soil biology, chemistry and physics, soil and environment interaction, soil formation, diagenesis, erosion and transport, loess and paleosols

- **Natural Processes and Geohazards**

All contributions related to extreme weather and climate events, drought, fire and water scarcity, floods and landslides, earthquakes and neotectonics, volcanic hazards and aerosols, pollution, risk assessments and -reduction

- **Geochronology, stratigraphy and sedimentology**

All contributions related to application of, and advances in, geo- and thermochronology, paleomagnetism and magnetostratigraphy, radionuclides, radiocarbon and luminescence dating, trace and stable isotope geochemistry, correlations and mapping, statistical methods, scales and scaling, eolian dust and sedimentation, carbonate and siliclastic sediments, modern and ancient sedimentary environment

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About Tehran

Tehran is the capital and largest city of Iran. Tehran is the most populous city in Iran and Western Asia, and has the second-largest metropolitan area in the Middle East, after Cairo. It is ranked 24th in the world by metropolitan area population.

Tehran's climate is largely defined by its geographic location, with the towering Alborz mountains to its north and the country's central desert to the south. It can be generally described as mild in spring and autumn, hot and dry in summer, and cold and wet in winter.

Average high temperatures are between 31 °C (88 °F) and 38 °C (100 °F) during summer months. During the winter months, average high temperatures are between 3 °C (37 °F) and 11 °C (52 °F) and average low temperatures are between −5 °C (23 °F) and 1 °C (34 °F). Most of the annual precipitation occurs from late autumn to mid-spring. March is the wettest month with an average precipitation of 39.6 millimeters (1.56 in).

Important dates

January 29- February 1, 2024: Conference

- May 1, 2023: Registration opens, call for the abstracts
- November 1, 2023: Deadline for abstract submission
- December 1, 2023: Announcement of abstracts

Fees

Participation is both in-person and virtual. We look forward to seeing you in Tehran or online.

***Conference fees: Lunch, conference package, icebreaker.**
***Excursion fees: Lunch, dinner, excursion package, bus and breaks**
***Foreign participants will be charged in cash in Iran.**

Categories	Conference (2 days)	Excursion 1 (2 days)	Excursion 2 (5 days)
Abstract submission	Free	-	-
Online participants	Free	-	-
Members of the Iranian Quaternary Association	USD 50	USD 100	USD 200
Non-members of the Iranian Quaternary Association	USD 100	USD 100	USD 200
Students & accompanying persons	USD 50	USD 100	USD 200

Field trip

1- Alborz Mountains and Central Plateau

Badab-e Surt colorful spring in Sari, Cheshmeh Ali spring as a part of Damghan fault (length 100 km) close to Teppe Hesar site (4000 BC) and Haj Aligoli desert (Figure 1) combination of Sand dunes, Nebkha deposits, and salt playa.

Figure 1: Satellite view of Haj Aligholo Playa, Cheshmeh Ali and Badab-e surt springs

-Badab-e Surt spring

Badab-e Surt spring (BSs) lying at about 1,841 m asl in Alborz Mountain ranges is located in Northern Iran (Mazandaran province), 100km of Southern Sari city and east of Orost village, it is recognized as a World Heritage Site. A few other places in the world resemble it, including the Pamukkale in Denizli in southwestern Turkey, Mammoth Hot Springs in the USA, and Huanglong in Sichuan Province of China (Sotohian and Ranjbaran 2015). Geologically the spring comes from Shemshak Formation a thick sequence of siliciclastic sediments and coal-bearing deposits.

BSs (Figure 2) is including two springs, one with the saline and the other spring water has a sour taste and orange color. They formed during Pleistocene and Pliocene, by the time the discharged cool bicarbonate-rich waters from these springs has resulted in the formation of red, orange and yellow travertine terraces with crystalline crust, pisoid, tufa, and carbonate black muds lithofacies (Sotohian and Ranjbaran 2015).

Figure 2. Badab-e Surt Spring

-Haj Aligoli desert

Haj Aligoli /Chah-e-jam/Damghan desert is located at about 1050-1094 m asl in the southern Alborz Mountains close to dry plains of Iran central plateau and southeast of Damgan city (Semnan province). The desert area is 2391 sq.km; average temperature during summer season (JJ) is 48 ^{o}C and -5 ^{o}C in winter (JF) (Vahdati Nasab and Hashemi 2016). Damgan desert is a sedimentary-structural phenomenon (Ahmadi 1999). Due to poor vegetation, negative effective precipitation, and wind activity desert landforms Nebkah, Barkhan, Seif, and Sand dunes are dominant in the area (Vali and Musavi 2010). Based on sedimentology Damgan desert can be divided into three parts. The first part, which comprises 47% of the desert, is the flat plate of clayey sediments, the second part is the wet or swampy area, which covers an area of about 34% of the surface of the desert, and finally the remained central part is a salt desert (Figure 3) (Krinsley 1970). Discovered Upper/Epipaleolithic periods settlement evidence in the area indicating that climate during the Late Pleistocene was different from that present (Vahdati Nasab and Hashemi 2016).

Figure 3: Damghan Salt Playa

-Cheshmeh Ali spring

The biggest karstic spring in Semnan province called Cheshme-Ali (Cas)(Figure 4) is located at 30 km of NW Damghan and is one of Damghan's desert catchments. Cas water discharge is 500-700 l/s and which provides drinking water for part of Semnan city and 25 nearby villages. The average annual precipitation of the Cas watershed is 155 whereas the number for the evaporation is 1900 mm. Geologically Cas are a part of the eastern Alborz zone which is a combination of the thick Delichae and thin Lar calcareous formations (Hosseini et al. 2018).

Figure 4: Cheshmeh Ali and the constructed palace

2- Makran- Chabahar

In geology studies, Iran's East area is usually surveyed as an independent unit. This area was isolated from the sea in the late of third geological era because of organic movements and Lime scale build of marine that type are stacked in it at first and then sediments with relatively coarse and fine materials are stacked in it. The southern part of the province (Makran) is one of the areas that is under the gradual subsidence because of large thickness of sandy clay sediments that its depth reaches to 1 Km. Accordingly, the Indian Ocean's crust slope into the ground under this area that is one of the causes for creating a lot of mineral water springs and mud volcanoes in this area. Heights of Sistan and Baluchistan belonged to the second and third periods of geology and its stones are often Lime and plaster. According to the geologists, some mountains of this province (like Taftan volcano) belong to the late third era and early fourth era. Width of the province's mountains is increased from the north to the south and reaches to its maximum amount between Iranshahr-Koohak (Bootorab, 2006).

Figure 1: Satellite view of places to visit in Makran-Chabahar

-Mud Volcanoes

One of the unique Iran's geomorphology phenomena that are mainly located in the south of Sistan and Baluchistan province is mud volcanoes. These effects are cone-like shapes similar to volcano that instead of lava, flower according with hydrocarbon gases (like Methane), di oxide carbon and petroleum materials exit from its crater (Yazdi et al., 2012). According to the existence of substrates in the flower of mud volcanoes, today flower therapy has a special status and a lot of physicians find its effectiveness. Besides tourism, mud volcanoes are important in the field of treatment and can be useful in treating diseases of muscle, skin, gastrointestinal etc. (Yazdi et al., 2012). Baluchistan mud volcanoes are young and their existence backed from 30 to 40 thousand years ago (Negaresh, 2001). Mud volcanoes of this area are about 13 ones and their most important ones are Pirgel, Napag, Ain, Tang and Balbolok

Figure 2: Napag mud volcano crater (Yazdi et al., 2016)

Figure 3: Created bubble in outgoing flowers of Tang mud volcano

-Hara Jungle (Mangrove)

Hara trees are expanded in Oman coasts especially around Gowatr, Khoors and Bahookalat estuaries. The name of its kind is Avicenia Marina that their height reaches from 6 to 9 m. The leaves of these trees act as refinery and pass the salts (Negaresh, 2005). These trees grow mainly on fine sediment of the coast, estuaries and coastal marshes that are influenced by tidal currents (Momeni, 1991). Hara jungles with sea lanes between them create beautiful landscapes.

Figure 4: Hara Jungle (Mangrove)

-Wetlands (The Pink Lagoon)

Lipar or the Pink Lagoon is a 13-kilometer wetland located 5 kilometers from Chabahar on the road to Gwatre. In late winter and early spring as well as end of summer and early fall visitors can witness the red tide phenomenon at this wetland. Lipar Wetland is a great bird watching destination and is home to the coot, flamingo, grebe, great egret, grey heron, purple swamphen, sandgrouse, see-see partridge, grey francolin, tawny eagle, Eurasian teal and kestrel. Lipar wetland is also home to the endangered marbled duck. Lipar is the shores of beautiful and interesting areas of the region. Lipar wetland near the village of Ramin and 15 km East Coast Chabahar on the road Chabahar – Gwatre with the prospect of was fantastic. Growth of oak and nettle in the water of beauty has created a wonderful scene that cannot be seen anywhere else in the country. Lipar Red lagoon waters red with a beautiful view is taken.

Figure 5: Lipar Wetland or the Pink Lagoon

-Miniature Mountains (Mars or Martian Mounts)

25 kilometers of Chabahar on the northern coast of Oman Sea (Chabahar road-Gwatre), water and wind erosion on the marl- sandstone formations green area, the beautiful scenery of the foothills regular and frequent bad as the land under canvas (Bad Land) or the Mars mountains or the miniature mountains are established. These mountains are extremely beautiful and considered to be symbols of the unique geo-morphological phenomena of Chabahar. Mars or miniature mountains have been extensive parallel to the sea (along east - west) from near Kachoo village to the Gwatre Bay.

Figure 6: Mars or Miniature Mountain (https://itto.org)

-Erosion of honeycomb (Sadaf)

Wind erosion and surface water, especially rain in southern coasts of Chabahar, beautiful buildings and fungal forms honeycomb has established that locals say they Sadaf. These beautiful shapes in sandstone and carbonate rocks can be seen in abundance.

Figure 7: Erosion of honeycomb (Sadaf) on the road Lipar – Chabahar (Yazdi, et al, 2016)

Workshop

Name	Date	Capacity
Scientific writing	2024/01/28	30 persons

Director: Mahyar Mohtadi - MARUM, University of Bremen

Objectives and notes:

In this course you will learn the essential criteria for a good paper and how to write a clear and concise article that will appeal to a broad audience

1- Writing style

readability, focus and flow, transitions, improving writing style

2- Title and abstract

criteria for a good title/abstract, what to use/avoid when writing titles and abstracts (with exercise)

3- Main text

what to include in/exclude from, each section of the paper, how to effectively organize the ideas, creating a narrative flow to help readers follow your argument

4- Data management

correct recording, sharing and preserving, managing and sharing of your data

5- Data presentation

principles of creating clear and informative figures, tables and captions for your paper

6- Authorship and responsibilities

authorship and author order, acknowledgement, scientific integrity

7- Selecting a journal

criteria, priorities, checklist

8- Submission

cover letter, useful information without repeating the abstract (with exercise)

9-Peer review

different models, referee selection, suggestions

10- Decisions

distinguish and interpret the different types of editorial decisions, rebuttal and appeal letters, post acceptance

11- Plagiarism and ethical issues

different types of misconduct, correction or retraction, information and advice

Venue

The Conference will be held at Research Institute of Earth Sciences, Geological Survey of Iran, Tehran.

Conference rooms

GSI Conference Hall

Hall of Earth Sciences Research Institute

Meeting Hall of Earth Sciences Research Institute

Hotels

***Hotel expenses are the responsibility of the participants. If you need to coordinate, please contact the executive team.**

***The list of hotels is below. If you need guidance and coordination, please contact the executive team.**

Espinas hotels *****

https://espinashotels.com/

Olympic hotel ****

http://en.olympichotel.ir/

Pazhouhesh hotel ***

https://pazhouheshhotel.ir/

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Contact

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