

5th MIDDLE-EAST SPELEOLOGY SYMPOSIUM (MESS5)

22, 23 & 24 October 2024



Organized by the
Spéléo-Club du Liban (SCL)

Under the patronage of the
Union Internationale de Spéléologie (UIS)

Conference Venue
Sultan Qaboos University – Muscat - Oman

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MESS 5

MIDDLE-EAST
SPELEOLOGY
SYMPOSIUM

Organized by the Speleo-Club du Liban and the Sultan Qaboos University,
under the patronage of the Union Internationale de Speleologie (UIS).

 **22, 23, 24**
OCTOBER 2024

 **SULTAN QABOOS UNIVERSITY,
MUSCAT, OMAN**

INFO@SPELEOLIBAN.ORG



**CHANGE YOUR
ROUTINE**

MESS 5 Poster (Photo by Johnny Tawk, 7th Hole Sinkhole, Oman)



**KHALED TOURISM
ADVENTURES**



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MESS5 – 2024 / Spéléo-Club du Liban

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1. Message from the Chairman

The 5th Middle East Speleology Symposium will soon reunite us again. This time we will meet in the great country of Sultanate of Oman in the prestigious Sultan Qabous University (SQU). Those cavers and scientists with a passion to caves and karst and interest or curiosity of the Middle East will find their peers at the MESS5 on the 22nd, 23rd and 24th of October 2024. We look forward to meet old friends and getting to know new friends during this reunion.

The MESS5 Scientific Programme will follow on the previously defined themes and topics, keeping coherence with the Middle East Speleology Symposia. It will cover the three major thematic domains (Technical Speleology, Scientific Speleology, and Karst Management & Protection). We expect also major contributions in a Spelemedia-dedicated thematic domain.

On behalf of the MESS5 Organizing Committee, I would like to thank the University of Sultan Qabous and the Ministry of Heritage & Tourism for their trust. We are also grateful to the members of the Scientific Committee for all their efforts with regard to the quality and pertinence of the selected contributions. Last but not least, I would like to thank all those who will make it to Oman and with whom we shall have indeed a great reunion.

Fadi H. Nader

2. Lebanon and Speleology

More than 65 % of the overall Lebanese territories (10,452 km²) are covered by typical karstic terrains. And as such, Lebanon is considered to be a showcase for karst features, forming an exception in the otherwise predominantly dry Middle-East. Two mountain ranges, Mount Lebanon and Anti Lebanon, are separated by the Bekaa Plain and dominate the topography of the country. Main karstic outcrops are Jurassic and Cretaceous limestones and dolostones.

Precipitation in the form of rain or snow is relatively abundant (ca. 600-2000 mm/year), particularly on Lebanon's western flanks and especially on high altitudes. The nature of the soil allows for a direct infiltration and recharge of the groundwater resources. Therefore, all the conditions are in place to promote the development of caves.

The ubiquity of carbonate rocks gives the landscape a varying and spectacular relief. The exceptional development of this landscape, materialized through the existence of monumental underground karstic features. Dolines are countless on Lebanon's high plateau (above an altitude of 1000 m) and poljes are not uncommon to find. The Yammouneh Polje, which is found at an altitude of 1400 m on the eastern slopes of Mount-Lebanon, is the most famous one. It covers an area of 6.3 km². In many places, the bare limestone rock outcrops show exceptional karren features offering a breath-taking scenery.

The pioneer of the Lebanese speleology is Lionel Gorra. In the 1940s, he was only eighteen when he participated in the early explorations of the underground River of the Jeita cavern. But it was not until 1946 when he went for his first expedition inside the cave. Albert Anavy joined him the year after. They surrounded themselves with friends and started to organize expeditions, always in Jeita. In 1948, the idea was born to group these underground discovery addicts together in an association. This took place in 1951 as the Spéléo-Club du Liban came into being. The founder were Lionel Gorra, Albert Anavy, Raymond Khawam and Sami Karkabi.

In 1961, the Spéléo-Club du Liban helped establish a small group of cave-explorers working at the Middle East Airlines. In 1966, Ouadi El Aarayesh Spéléo-Club (Zahle) was founded, while the Groupe d'Études et de Recherches Souterraines du Liban (GERSL) was established in 1988 and then the Association Libanaise d'Études Speleologiques (ALES) in 1994.

As one may notice, speleology in Lebanon has witnessed during these last years a growing revival of underground activities. A perceptible trend towards research was established within the four groups constituted by the disciplines' adepts.

After the first National Meeting organized in 1996, the Spéléo-Club du Liban (SCL) and the Lebanese National Council for Scientific Research (LNCSR) launched the "First International Symposium of Middle East Speleology" (MESS1). This event was held at the University of the Holy Spirit, Kaslik (USEK) in April 2001 and was under the high patronage of the Ministry of Environment. The MESS1 was the first conference of its kind. Among the participants, 50 international speleologists (Arabs, Europeans, Americans, and Japanese) have shared their experiences and knowledge contributing as such to the success of that event. In 2006, The "Spéléo-Club du Liban (SCL) and the Lebanese National Council for Scientific Research (LNCSR) organized the 2nd Middle East Speleology Symposium at the American University of Beirut (AUB) and under the patronage of the International Union of Speleology (UIS). About 150 speleologists attended this event, including some 65 international cavers and karst scientists. In 2011, the SCL and the Lebanese National Council for Scientific Research (LNCSR) organized the 3rd Middle East Speleology Symposium at the University of the Holy Spirit, Kaslik (USEK) in September 2011. In 2018, the SCL, AKUMAK & ASPEG organized the 4th Middle East Speleology Symposium at Akdeniz University, in Antalya (Turkey), under the patronage of the International Union of Speleology (UIS).

3. Agenda and Deadlines

The preliminary MESS4 **time-schedule** is presented in the following table.

OCTOBER 2024	22 Tu.	Registration Opening Ceremony Sessions Theme A: Technical Speleology Sessions Theme D: Spelemedia
	23 Wed.	Sessions Theme B: Scientific Speleology Lunch Break Sessions Theme B: Scientific Speleology Sessions Theme D: Spelemedia
	24 Thu.	Sessions Theme C: Karst Management and Protection Lunch Break Sessions Theme C: Karst Management and Protection Sessions Theme D: Spelemedia
	25 Fri.	Field Trip

4. Themes of the Symposium

The MESS5 includes four separate **themes** covering almost all aspects of speleology and karst sciences: (A) Technical Speleology, (B) Scientific Speleology, (C) Karst Development and Protection, and (D) Spelemedia. Some of these themes are further subdivided into separate **sessions** which groups the presentations by discipline (e.g. [A1] Exploration & New Discoveries, [B4] Biospeleology, [C3] Applied Speleology). All the themes and related sessions are presented in the following table:

MESS5 22-23-24 OCT. 2024	THEMES	SESSIONS
	Theme A: Technical Speleology	A1: Exploration & New Discoveries
		A2: Speleo-Techniques & Cave-Rescue
	Theme B: Scientific Speleology	B1: Archaeology
		B2: Hydrogeology
		B3: Geology
		B4: Biospeleology
	Theme C: Karst Management and Protection	C1: Tourism
		C2: Protection and Sustainability
		C3: Applied Speleology
Theme D: Spelemedia	D1: Posters/Photos	
	D2: Videos/Films	

4.1. Theme A: Technical Speleology

The theme on speleological discoveries and techniques is organized in two sessions: (A1) Exploration & New Discoveries, and (A2) Speleo-Techniques & Cave-Rescue. New reports on speleological explorations and discoveries in the Middle-East are expected. In addition, up-to-date techniques of exploration will be discussed. Contributions on the exploration techniques include papers on recent breakthrough in technological progresses, problems and appropriate solutions for caving. The diversity of speleology as a scientific discipline and as a sport activity is often burdened with problems. Therefore, technical innovation (in underground progression, topography and photography) and the use of already existing techniques in other related sport disciplines (e.g. climbing) are essential for caving.

Contrary to common belief, cave rescue does not simply entail the dispatching of hardened cavers underground to rescue their colleagues. It is a separate discipline with special technical skills, organization, and responsibility. This activity, whose success can save lives, requires a series of constantly evolving technical skills as well as tight collaboration with administrative bodies and non-governmental organizations.

4.2. Theme B: Scientific Speleology

The Scientific Speleology Theme groups all the scientific topics (organized here below in sessions), namely (B1) Archaeology, (B2) Hydrogeology, (B3) Geology, and (B4) Biospeleology.

4.2.1. Session B1: Archaeology

Throughout the Middle-East, man was able to settle in hilly and uneven karstic regions, further adjusting the cavernous landscape to meet his needs. Cave constructions (fortified caves, monasteries, chapels, and hermitages), troglodyte habitats, and funerary vaults – usually found in many caves – illustrate that early tendency.

Since the XIXth century, archaeologists have shown their interest in the study of caves, especially in order to unearth prehistoric vestiges. Yet, the ‘speleo-archaeology’ is practiced as a separate new discipline only since the 1980s. It includes physical, technical and scientific aspects. It is worth noting that in this regard the Lebanese experience has had a significant impact on this discipline.

4.2.2. Session B2: Hydrogeology

Hydrogeology is the investigation of groundwater, which is one of the most important resources for humankind. Speleology is a powerful tool for hydrogeologists when dealing with karstic terrains. Some of the enigmatic hydrogeological issues could be observed and understood underground (e.g., water

level fluctuations, flow dynamics, conduits dimensions). This session aims to showcase some of the major advances in hydrogeology of karstic systems in the Middle East region and analogs from other regions. Here, Earth scientists are invited to present papers on the hydrogeology of karstic formations as well as numerical modeling.

4.2.3. Session B3: Geology

Contributions related to speleogenesis and speleothems studies are grouped in one session together with geological studies involving karst terrains and caves. Speleogenesis is the study of the origin of caves (genesis) and their formation in various settings. Papers in this context will focus on the understanding of formation of caves in the Middle-East from the perspective of geology. The main topics in this theme will encompass, among others, the evolutionary typology of karst systems and the geological and hydrogeological controls over speleogenesis in various conditions. Papers related to paleoclimatic studies using speleothems as well as contributions to the description and characterization of unusual speleothems form the bulk of this session. Speleothems are broadly distributed around the world and offer invaluable data that are beneficial for various scientific research disciplines. The chemical composition of speleothems may help in reconstructing the nature and extent of groundwater recharge of the cave area, as well as the physico-chemical conditions during their growth/precipitation.

4.2.4. Session B4: Biospeleology

The session on biospeleology groups all the biological studies related to caves and the karst environment. The stable environment within caves with respect to temperature and humidity provides a very adequate living environment for many organisms. Biospeleology outlines all the recent discoveries and studies related to organisms living in caves having different ambient conditions. This session seeks to highlight the relationship between the cave environment in the Middle-East and Near East regions, and the various faunal and floral living species at the micro- and macro-scales.

4.3. Theme C: Karst Management and Protection

The theme on karst development and protection includes subjects related to tourism (including archaeological-, religious- and cultural-based tourism), sustainable development and management of karstic resources, and applied speleology themes. The high susceptibility to contamination and the incurable deterioration in cave aesthetic wonders are the most significant characteristics that render karst terrains in desperate need for protection. Applied speleology and its significance in underground constructions, public infrastructure and urban development also fits well in Theme C.

4.4. Theme D: Spelemedia

Spelemedia is substantial for caving and public communities. With the era of internet and fast, easy access to information, the underground could make use of spelemedia in order to be well presented and protected. The Spelemedia theme groups all audio-visual sessions, which are related to the following subjects: (D1) photos and posters, and (D2) videos and films.

The best way to understand the comprehensive evolution of underground phenomena remains the calcareous landscape in which the cave evolves. Some countries in the Middle East region include karstic regions. In these calcareous massifs, zones with varied morphological characters are found. They are intrinsically linked with caves, abysses, shelters, etc. It is therefore important to mention that parallel to the underground photography, Spelemedia also involves recording these surface land-forms in their best aspects. The karren, dolines, canyons, uvalas, and dry valleys offer various and spectacular forms. Let us not forget the impact of human occupation, whose troglodyte dimension confers to the speleology an additional historical interest.

The objective of spelemedia is to provide the necessary documents, which illustrate speleology-derived resources with the help of photography and film-making. This event will allow the participating Lebanese

and foreign cavers to address the biggest number of people concerning the efforts cavers put benevolently and modestly for the cause of recording underground discoveries.

5. Abstracts and Presentations

Participants wishing to contribute to the MESS5, by presenting results of their explorations and studies are required to submit an abstract by August 12th 2024. The submitted/accepted abstracts will be published in the Symposium Abstract Book. There will be possibilities for both oral and poster presentations. Interested participants are invited to send their abstracts to the following e-mail address: info@speleoliban.org

Upon the receipt of abstracts (refer to template), **the leading authors will be shortly notified if their contribution will be accepted as an oral or poster presentation.**

The guidelines for the preparation and submission of abstracts are prepared in “Guidelines Kit” that can be downloaded or sent by email on demand. Authors are kindly asked to follow the instructions in order to help in getting the abstracts book ready before the opening of the symposium. There will be a call for larger-scale manuscripts for publication in a special volume after the symposium.

Deadlines Reminder

- **August 12th, 2024:** **Deadline for submitting abstracts**
Aug-Sept: Manuscripts reviewing and rapid replies to authors

Abstract Submission Guidelines:

Authors are kindly asked to respect the format guidelines for abstract submission (listed here below).

Standard font: Arial

Title: centered, upper case, font size 12.

Authors:

First author: First Name (lower case), LAST NAME (upper case);
Organization name & address; e-mail.

Second author: First Name (lower case), LAST NAME (upper case);
Organization name & address.

Third author: ...

If all the authors are from the same organization, give the organization name only once at a separate line below the names of the authors.

Correspondence will be restricted to the speaker who should be preferably the first author; if not, indicate. The speaker is the only author to include his/her email and will be considered the corresponding author.

Double spacing between the author names/ affiliation and the abstract's text.

All the paragraphs should have justified alignment, single-spaced, font size 10.

The abstract (title, authors name/ affiliations, and text) may not exceed 250 words including spaces.

Select the Theme and Session in which you want to present your abstract and include it as a footnote (check Themes of the Symposium, above).

Mode of Presentation: Select the mode of presentation and include it in the abstract's footnote.

Oral presentations: LCD projector for Power Point
Slide show equipment

Scientific Posters: A0 size (90x120cm)

Each poster should include:

1. Title
2. Name and address of authors
3. Abstract
4. Introduction (+ research objectives)
5. Materials & methodology
6. Results
7. Discussion
8. Conclusion
9. Major references (optional)

The guidelines for the preparation and submission of abstracts will be sent to the leading authors as a "Guidelines Kit" or can be downloaded as a template at

https://www.speleoliban.org/index.php?f=Mess_5

There will be a call for larger-scale manuscripts for publication in a special volume after the symposium.

6. Subscription and Registration

6.1. Symposium Registration Fees

Registration Type	Registration Fees
Full Participation:	50 US \$

Registration fees include: Access to all sessions/ Opening ceremony / Coffee breaks/ Gala Dinner / Symposium bag.

Note that registration fees are to be paid in cash onsite upon arrival to the Symposium venue.

6.2. Accommodation

All chosen hotels and accommodation are around 10-20 minutes by car from the symposium venue; a shuttle bus will be available for transportation. Prices vary from 50 to 100 \$ for a double occupancy room.

Sama Muscat Hotel	Phone: +968 24 188555
Wave view hotel	Phone: +968 7272 7981
Holiday Inn	Phone: +968 22 080555
Remas hotel	Phone: +968 24 260000
Season inn Hotel	Phone: +968 7172 2222
Boulevard hotel	Phone: +068 22 845900
Al Hail Waves	Phone: +968 7990 3144
Diamond Star	Phone: +9687990 6111

6.3. Excursions Post-Symposium

One day canyoning trip Wadi Al Jamal

Departure at 7am from Muscat
1H30 drive

Start the approach hike at 8h30. Short stop to visit an ancient fortress
Reaching a tributary of the canyon after 1hour
4 drops to reach the main canyon.

Hike upstream in the canyon to reach a superb waterfall with a pool.
Snack break 30 minutes and start going downstream around 1h30pm
5 drops in total with short pools to cross swimming.
Reach the car around 5h30pm
Reach Muscat around 7pm

Price: Including transportation in normal car, ropes are provided, snacks and late lunch.

600\$/ per car (Maximum 5pax / car)
Excluding canyoning personal equipment and wetsuit.



(Photos by Khaled Abdul Malak, Oman)

Caving trip from the 7Th Hole to Al Tahri Cave 2 days

First day

Leave Muscat around 8h30am

Drive to Selmah plateau with 4x4 cars. Around 2.5 hours

Quick stop at "Majlis Al Jinn": one of the biggest chambers on the Earth

Reach the 7th Hole entrance and set up the camp. Lunch 1pm

Visit the site

Set up the ropes

Dinner and sleep

Second day

Early breakfast

Start the traverse from the 7th Hole to Al Tahri cave at 7am

Reach the resurgence around 2pm

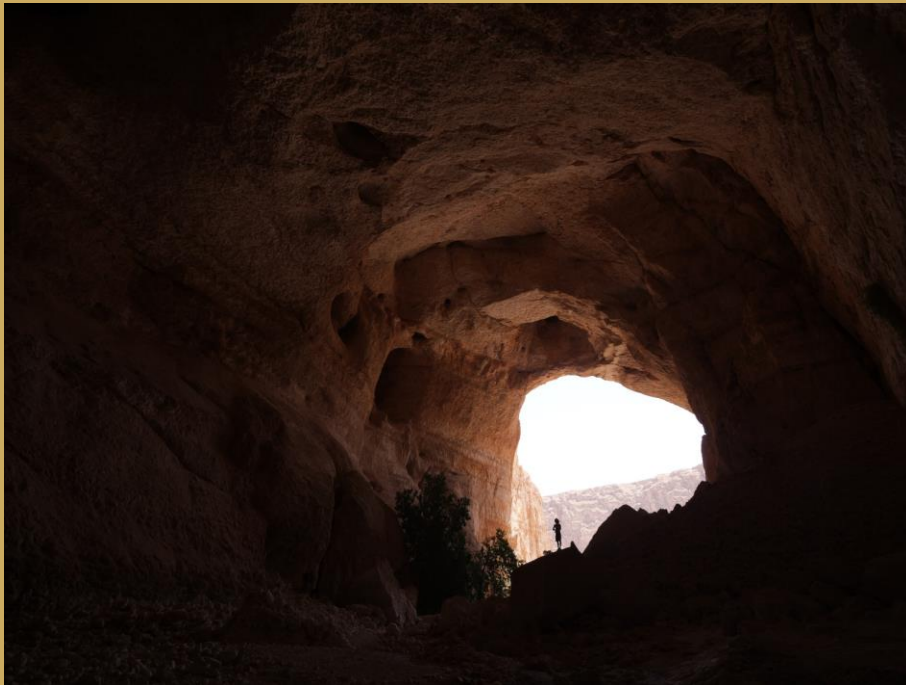
Hike from the resurgence to the cars and reach around 4pm

Drive back to Muscat and reach the hotel around 6h30pm

Price: 2 days trip with camping including transportation in 4x4 cars, ropes and all meals
1000\$ / per car (Maximum 5 pax / car)
Excluding personal SRT equipment and wetsuit.



(Photos by Khaled Abdul Malak, Oman)



(Photos by Khaled Abdul Malak, Oman)

7. Registration:

For registration, please download and fill in the registration form from the website https://www.speleoliban.org/index.php?f=Mess_5 and send as attached file to info@speleoliban.org

Payment of registration fees will be made upon arrival to MESS5 venue.