

[Test] July KC News

3 messages

Avi <burg@gsi.gov.il>

Mon, Jul 24, 2023 at 9:17 AM

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July 2023 NEWS

Chairs: Peter Malik (Europe/Africa, 9/21 - 12/22); Avi Burg (Asia/Oceania, 1/23 - 4/24); Benjamin Tobin (Americas), 5/24 - 8/25)

Greeting from the chairs

Summer is already here (for those who live in the northern hemisphere) and we take the opportunity to wish you all a great summer (slightly cooler please....), a relaxing and enjoyable vacation, and good health.



Special requests

We recently posted on the KC platform two separate special requests from our friends Michel Bakalowicz and Mario Parise. Michel from the Université de Montpellier looked for experienced experts to advise a French local authority on how to maintain the flow rate of a major karst spring used for various important purposes. Mario from Università Aldo Moro, Bari, asked the KC members to refer students to participate in a Ph.D. project titled "Earth processes and management of resources and risks for a resilient society". Thanks to those who cooperated, answered, and helped; we would like to remind you all that the KC platform is available for special requests, as well as important comments and messages sent by our members. Use this when needed!!

4 Associated members are now full members of the KC

We are pleased to inform you that 4 members of our group are now 'full KC members' after completing 2 years of 'associated membership':

Jordan Samuel Mwavu (Gojetech limited, Uganda),

Nenad Marić (University of Belgrade, Serbia),

Daniel Bittner (University of Dresden, Germany),

Shishir K. Sarker (University of Kentucky, USA),

We hope to see you all continue to be involved in our activities.

UPCOMING KC EVENTS

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Eurokarst 2024 (a message from Mario Parise)

The next edition of the biannual international conference on karst hydrogeology EUROKARST, with hundreds of participants worldwide, will be organized for the first time in Rome (Italy), after the usual places of Neuchatel (Switzerland), Besancon (France), and Malaga (Spain). The conference is aimed in presenting the latest news on hydrogeological research on karst aquifers and in discussing groundwater, the fundamental resource for human beings, social development and environmental protection.

EUROKARST 2024 will be co-organized by the Sapienza University of Rome, the University Aldo Moro of Bari and the Sannio University of Benevento, with the support of the Italian Chapter of the IAH, and will be hosted at the main campus of Sapienza University, central Rome, between June 10 and 14, 2024.

You can find out more information at: <http://www.eurokarst.org> or contact the organizers listed below.

The Chairs of the Organizing Committee:

Francesco Fiorillo (Chair, University of Sannio, Benevento, Italy)

francesco.fiorillo@unisannio.it

Mario Parise (Chair, University Aldo Moro, Bari, Italy) mario.parise@uniba.it

Marco Petitta (Chair, Sapienza University of Rome, Italy) marco.petitta@uniroma1.it

More details will be sent in the coming months.

IAH worldwide groundwater congress: 17 – 22 Sept. 2023, Capetown, South Africa

The Congress theme for IAH 50 is "Groundwater: A Matter of Scale". This theme combines scientific advances through local to global scale experiments and case studies, with those extending over various temporal scales.

We urge the KC group members to attend this conference that brings together most members of the IAH - the umbrella organization that hosts several commissions including our own.

Find out more information at <https://iah2023.org.za>;

Keep in mind that 21 August 2023 is the deadline for late registration.

Inventory of geological heritage sites

We would like to draw your attention to an ongoing project managed by the International Union of Geological Sciences (IUGS) - Geological Heritage Sites program, in collaboration with UNESCO, which aims in developing a worldwide inventory of geological heritage sites of international relevance. For more details see: <https://www.unesco.org/en/igpp/igcp-projects/731>.

The first report - "[First 100 IUGS Geological Heritage Sites](https://www.unesco.org/en/igpp/igcp-projects/731)" was published in 2022 (<https://iugs-geoheritage.org/> where you can download a PDF or buy the book, and also on Wikipedia:

https://en.wikipedia.org/wiki/Category:First_100_IUGS_Geological_Heritage_Sites).

More than 485 experts and 10 international organizations from more than 40 countries participated in the site selection. Another report ("[Second 110 heritage sites](https://www.unesco.org/en/igpp/igcp-projects/731)") is now being prepared and the IAH is also involved in the selecting of sites.

Recommended publications

Our friend Nico Goldscheider drew our attention to a recently published article written by his group (*Zhang, J., Liesch, T., Chen, Z. and Goldscheider, N. (2023). Global analysis of land-use changes in karst areas and the implications for water resources. Hydrogeology Journal, 1-12., published online; <https://doi.org/10.1007/s10040-023-02650-5>*). The article analyzes land use and land-use change in karst regions on a global scale. The article first describes the global karst land-use distribution in 2020, and then, the characteristics of the land-use transition between 1992 and 2020. Two indicators, the proportion of land-use change and the dominant type of land-use change are proposed to identify the spatial characteristics of land-use change in global karst regions. The results reflect the impact of human activities and climate change on land-use changes in global karst regions.

See below some other interesting new articles, all dealing with different aspects of flow in karst complexes.

The paper by Cinkus et al. (1) compares two lumped parameter modeling approaches: artificial neural networks (ANNs) and reservoir models using five karst systems in the Mediterranean and Alpine regions that have different characteristics in

terms of climatic conditions, hydrogeological properties, and data availability. Some of our colleagues who are active in the KARMA project are among the authors on the list.

The paper by Zini et al. (2) focuses on a polje, which is subject to frequent flooding, and has become more problematic since 2000, as swallow holes more often affected housing and recreational areas. A hydrogeological model of the area was built in order to estimate its recharge and regression curve and to define the functionalities of the swallow holes.

Two other articles analyzed contamination processes in karst regions. The paper by Li Vigni et al. (2023) describes a broad sampling campaign of many karstic springs throughout Greece, after which the sources of contamination were suggested. Lu et al. (2023) used in their research in China isotopic compositions of nitrogen and oxygen in nitrates in order to identify the nitrate contamination sources and the transport paths to the groundwater in a karstic region, as well as the annual processes that determine the volume of the contamination.

The article by Kadić et al. (2023) focuses on the relationship between karst spring discharge and turbidity during periods when the turbidity exceeds the permitted value of 4 NTU. This relationship was analyzed by means of classical hydrological methods including hysteresis loops. The karst catchment area of Jadro Spring in Croatia is the area chosen for the study. Jadro Spring is familiar to many of us due to the fact it was one of the recently visited sites during the geotrip to Croatia and Slovenia.

1. Cinkus, G., Wunsch, A., Mazzilli, N., Liesch, T., Chen, Z., Ravbar, N., Doummar, J., Fernández-Ortega, J., Barberá, A., Andreo, B., Goldscheider, N., Jourde, H., (2023). Comparison of artificial neural networks and reservoir models for simulating karst spring discharge on five test sites in the Alpine and Mediterranean regions. *Hydrology and Earth System Sciences*, V. 27(10): 1961-1985.
2. Zini, L., Calligaris, C., Forte, E., Turpaud, P., (2023). Flood hazard assessment in a polje: the case of Mucille (Classical Karst Region, NE Italy). *Environmental Earth Sciences*, V. 82(12), 293.
3. Li Vigni, L., Daskalopoulou, K., Calabrese, S., Brusca, L., Bellomo, S., Cardellini, C., Kyriakopoulos, K., Brugnone, Parello, F. and D'Alessandro, W. (2023). Hellenic karst waters: geogenic and anthropogenic processes affecting their geochemistry and quality. *Scientific Reports*, V. 13(1), 11191.
4. Lu, M., Yue, F. J., Wang, X. D., Liu, Z. H., Shi, Z. Y. and Zhang, P. (2023). Identify nitrogen transport paths and sources contribution in karst valley depression area using isotopic approach. *Journal of Environmental Management*, V. 337, 117751.
5. Kadić, A., Denić-Jukić, V. and Jukić, D. (2023). Exceeding Turbidity versus Karst Spring Discharge during Single Rainfall Events: The Case of the Jadro Spring. *Water*, V. 15(14), 2589.

We offer you also to take a look at *Hydrogeology Journal* – the journal of the IAH, which most of you get online. All journal volumes include publications on karst; For example, the last issue - 31:3 from June 2023, includes three articles with the word “karst” in the title (articles from Iran, China, and Italy).

Members who are interested in recommending a new relevant publication (their own or of their friends) are welcomed to send a link to one of the co-chairs.



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