



### In this issue

- Chairmen's greetings
- Summary of the last KC meeting
- MIKAS Project
- Upcoming KC events
- Recommended articles

## April 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)

### Chairman's greetings

This month we all celebrated a holiday with our families, the Christians celebrated Easter, the Muslims celebrated Ramadan, and the Jews celebrated Passover. I hope you all enjoyed the holiday and the vacation. For us the Israelis, Passover is the holiday of freedom (following a story in the Bible), and I allow myself to wish all of you, no matter who you are or what group of people you belong to, to live in peace and freedom everywhere and forever!!!

### Summary of the KC meeting during the 17th Sinkhole Conference

The 2023 meeting of the IAH Committee on Karst Hydrogeology was held on Wednesday, March 29, 2023, in Tampa, Florida (USA) during the 17th Multidisciplinary Conference on Sinkholes and the Engineering and Environmental Impacts of Karst. 17 of our members attended the meeting while others joined via Zoom. The meeting was chaired by two of the current Board Chairs - Ben Tobin and Peter Malik. The third, the chairman-in-charge - Avi Burg, had to participate in a local event in Israel, and therefore could not attend.

After an introduction made by the host-chairman - Ben, Nataša Ravbar from Slovenia spoke in memory of Andrej Kranjc, a KC member who passed away earlier this year.

Zoran Stevanović sent a recorded presentation describing the global MIKAS project and its progress and was later able to join the KC meeting online. Progress of the MIKAS (Most Important Karst Aquifer's Springs) project is presented separately in this KC News item. Nevan Kresić briefly described the content of the new textbook "Hydrogeology 101", which is now freely downloadable from the KC webpage. The number of its downloads is surprisingly high and we hope it will be helpful to groundwater professionals elsewhere. Philippe Meus was also able to join the meeting online while driving his car home, slightly surprised by the time the meeting start. However, he managed to make comprehensive information on Water Tracing Initiative progress. Bartolomé Andreo finally officially announced the Eurokarst 2024 Conference to be held in Rome (Italy) during June 10-14, 2024. Some contradictions were registered on the side of Italian colleagues present at the meeting, but finally, all participants agreed to offer a helping hand to the organizers if needed. The next Karst Commission meeting is planned to be a part of the Eurokarst 2024 event in Rome. During the discussion, Issam Bou Jaoude proposed creating a simple multilingual educational tool on karst specificities and karst groundwater issues to be publically understood not only by land-use planners but common folks in all continents.

The IAH Karst Commission annual meeting routinely serves as a platform for awarding young researchers and students (the Young Karst Researcher Prize – YKRP). With the help of Karst committee members, our decision about the three best was:

Jennifer Adkins Schudrowitz (Edwards Aquifer Authority, San Antonio Texas) – *Approaches to monitoring and regulation of an aquifer storage and recovery system in the Edwards Aquifer, south-central Texas.*

Kyle Compare (Florida State University-Department of Earth, Ocean & Atmospheric Science, Tallahassee) – *Using LSTM neural networks to simulate stage of Wakulla Springs in northwest Florida.*

Hannah Hitchcock (Department of Earth and Atmospheric Sciences, Saint Louis University, St. Louis, Missouri ) – *3D modeling of the Cabachuelas Natural Reserve cave system using LiDAR technology and ArcGIS Pro.*

## **MIKAS – Most Important Karst Aquifer's Springs International Project**

MIKAS, the international project of the Karst Commission, which aims to establish the first complete list of the most important karstic springs at a global level (based on historic, aesthetic, and scientific values), promote them, and create a Code of Practice for them, is approaching its first birthday. The project is led by our very active friend Zoran Stevanović. Project's achievements during the first nine months since the beginning of the project were reported at the KC annual meeting in Tampa, Florida, in March 2023. Meanwhile, the project's Advisory Board (AB) completed the Guidelines that include criteria for selecting suitable springs for the two established groups - MIKAS (list of globally important springs) and NIKAS (Nationally important

springs), and Spring's survey form. The project is currently run by 88 national experts who have agreed to work voluntarily on the project. At this stage, their expertise will cover 73 countries from all continents. The AB is still searching for collaborators and participants, especially from Central Asia, Western and Central Africa, the Caribbeans, and Oceania. If you know some experts from these parts of the world, or you have knowledge about springs in these regions from your previous expertise, do not hesitate to contact Zoran Stevanović ([zstev\\_2000@yahoo.co.uk](mailto:zstev_2000@yahoo.co.uk)).

*All relevant information will be incorporated into our website for this project. In the next KC News, we will send you the link as well as a description of the site's content.*

## UPCOMING KC EVENTS

=====

### **10<sup>th</sup> International Course “Characterization and Engineering of Karst Aquifers” (CEKA): 29 May – 4 June 2023, Trebinje, Bosnia and Herzegovina**

The course is organized by the Centre for Karst Hydrogeology of the Department of Hydrogeology, University of Belgrade - Faculty of Mining & Geology, the Geological Survey of the Republic of Srpska, from Zvornik (B&H). Support to this anniversary CEKA2023 will be provided by the hosts - Hydro-electric power plant system of Trebišnjica River - HET and the City of Trebinje. The event includes lecture sessions, field excursions, a 10-year celebration of the CEKA course as well as 15 years of successful work of the Centre for Karst Hydrogeology - CKH.

Additional information can be found at the website: [www.karst.edu.rs](http://www.karst.edu.rs), or contact Prof. Saša Milanović, Head of Centre for Karst Hydrogeology, University of Belgrade: [sasa.milanovic@rgf.bg.ac.rs](mailto:sasa.milanovic@rgf.bg.ac.rs).

### **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>;

Below are the important dates relevant to those who intend to participate:

- |                 |                                     |
|-----------------|-------------------------------------|
| 8 February 2023 | – online registration,              |
| 14 April 2023   | – Abstract submission deadline,     |
| 20 April 2023   | – Abstract acceptance confirmed,    |
| 31 May 2023     | – Early Bird registration deadline, |
| 21 August 2023  | – Late registration deadline,       |

## Recommended articles

Our friend Hervé Jourde has drawn our attention to two articles that may be of interest to the KC members. The two are about the analysis of karst spring discharge time series for the classification of karst hydrological functioning. The first one (1 below) explains the proposed methodology and the second (2 below) presents the user-friendly application (KartID) developed with R Shiny to easily perform such analysis and classification. This work was developed within the framework of Guillaume Cinkus Ph.D. thesis and the European Karma project.

The KarstID software is free, open-source, and actively developed on a developer community platform. The user-friendly installation and launch make it especially accessible even for non-programmers; therefore, KarstID can be used for both research and educational purposes. The application and its user manual are both available on the French SNO KARST website (<https://sokarst.org/en/software-en/karstid-en/>).

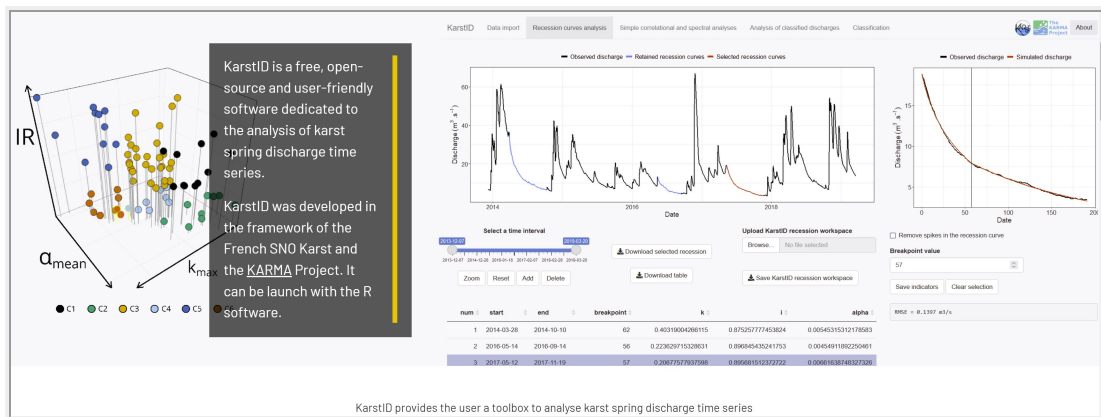
See below a representative pane from the paper that shows import and statistical analyses tabs.

(1) Cinkus, G., Mazzilli, N., and Jourde, H. (2021). Identification of relevant indicators for the assessment of karst systems hydrological functioning: proposal of a new classification. *Journal of Hydrology*, 603, 127006.

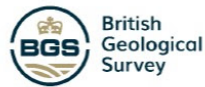
<https://doi.org/10.1016/j.jhydrol.2021.127006>

(2) Cinkus, G., Mazzilli, N., and Jourde, H. (2023). KarstID: an R Shiny application for the analysis of karst spring discharge time series and the classification of karst system hydrological functioning. *Environmental Earth Sciences*, 82(6), 136.

<https://doi.org/10.1007/s12665-023-10830-5>



Our New friend Luka Vucinic has asked to present a new informative report to the group members, recently published by the British Geological Survey (BGS) entitled "Karst in the Wessex Chalk (Hampshire and Wiltshire), Environmental Change, Adaptation and Resilience Programme Open Report OR/22/053" (see below the cover page of the report). The report documents the evidence for karst and rapid groundwater flow in the Wessex Basin chalk area of southern England, which comprises parts of Hampshire and Wiltshire. It is part of the BGS karst report series on those karst aquifers in England where cave development is limited – principally



## BGS Karst Report Series: C5. Karst in the Wessex Chalk (Hampshire and Wiltshire)

Environmental Change, Adaptation and Resilience Programme  
Open Report OR/22/053



See below some more interesting new articles, all dealing with different aspects of flow in karst complexes. Most of these articles analyze local aspects of karst systems, such as in China (6), in the Lesser Himalaya of India (5), in Tunisia (2), and in Albania (1; two of our active members – Romeo Eftimi and Mario Parise, are co-authors). Article (3) focuses on the flow system through metamorphic carbonate rocks (marbles) in Italy, while article (4) presents a regional-scale reactive transport model in Canada.

(1) Eftimi, R., Liso, I.S., and Parise, M. (2023). Classification and hydro-geochemistry of karst springs along the southern coast of Albania. *Carbonates and Evaporites*, 38(2), 35.

(2) Hamed, Y., Hadji, R., Ahmadi, R., Ayadi, Y., Shuhab, K., and Pulido-Bosch, A. (2023). Hydrogeological investigation of karst aquifers using an integrated geomorphological, geochemical, GIS, and remote sensing techniques (Southern Mediterranean Basin-Tunisia). *Environment, Development and Sustainability*, 1-33.

(3) Piccini, L., Nannoni, A., and Poggetti, E. (2023). Hydrodynamics of karst aquifers in metamorphic carbonate rocks: results from spring monitoring in the Apuan Alps

(Tuscany, Italy). Hydrogeology Journal, 31: 241-255.

(4) Priebe, E.H., Amos, R.T., Jackson, R.E., and Rudolph, D.L. (2023). Regional-scale reactive transport modelling of hydrogeochemical evolution in a karstic carbonate aquifer. Hydrogeology Journal, 31: 435-452.

(5) Shah, R. A., Rai, S. K., and Yadav, J. S. (2023). Understanding recharge processes and solute sources of groundwater in karst settings of the Lesser Himalaya, India. Arabian Journal of Geosciences, 16(3), 186.

(6) Shen, H., Xu, Y., Liang, Y., Zhao, C., Wang, Z., Zhang, Z., and Qi, J. (2023). groundwater recharge estimation in northern China karst regions. Carbonates and Evaporites, 38(1), 16.

***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.***



---

*Copyright © 2023 IAH karst Commission. All rights reserved.*  
You are receiving this email because you opted in via our website.

IAH Karst Commission  
Newsletter sent to members and friends of the IAH Karst Commission