
[Test] February KC News

1 message

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Mon, Feb 20, 2023 at 8:21 AM

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February 2023 NEWS

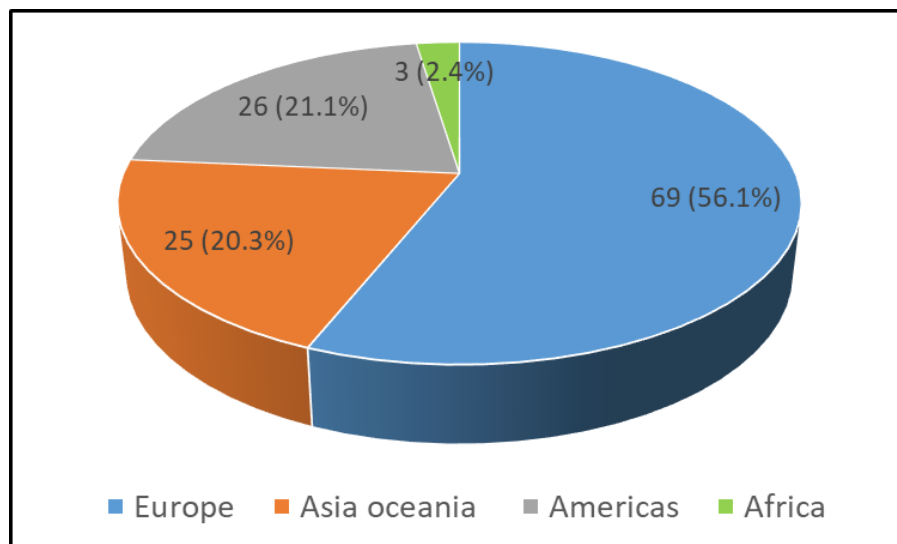
Chairs: Peter Malik (Europe/Africa, 9/21 - 12/22); Avi Burg (Asia/Oceania, 1/23 - 4/24); Benjamin Tobin (Americas), 5/24 - 8/25)

Some statistics

With the start of the new year, we checked the number of KC registered members and found some interesting statistics. Well, the total number of KC members is 129, coming from 36 different countries. Most countries (20) are represented by only 1 or 2 members, while there are only 6 countries represented by more than 5 members. The attached figure shows the distribution of members according to the continent they belong to (the values show the number of members belonging to the group and the relative percentage). Unfortunately, it is clear from the chart that there is a very small number of participants from Africa.

The software we use to send the KC News each month allows us to track the number of people who actually open the news. Surprisingly, as of January 2023, only 57 of our registered members (44%) opened the email and the attached file.

We, the three KC chairmen, are discussing a way to improve this situation and will probably contact members via the website to understand the big gap between the two numbers - list vs. actual readers.



New member of the KC group

We are pleased to welcome Luka Vucinic from Ireland as a new associate member of the KC Group.

Here is what Luka wrote about himself:

I am originally from Niksic, Montenegro. I graduated with a BSc/MSc degree in Geological Engineering - Hydrogeology in 2010 at the University of Belgrade. I did my final research there under the guidance of Prof. Zoran Stavanovic. After graduation, I worked in the environment and energy industry in Montenegro (i.e. Montenegrin Electric Enterprise - EPCG) for several years as a junior hydrogeologist and environmental specialist. Some of this work was related to karst hydrogeology (e.g. karst reservoirs of surface water). In 2015 I decided to move to Dublin, where I obtained (in 2016) an MSc in Environmental Science at Trinity College Dublin, and

there I had the opportunity to learn a lot about the Irish Karst from Prof. Catherine Coxon. Right after I completed the MSc program, I started my Ph.D. research (on the impact of on-site wastewater effluent on karst springs) under the supervision of Prof. Laurence Gill jointly with Prof. Catherine Coxon at Trinity College Dublin and the Irish Center for Research in Applied Geosciences - iCRAG. During that time, I also completed a Postgraduate Diploma in Environmental Engineering. I defended my Ph.D. thesis in 2021, and Dr. Natasa Ravbar was one of my thesis examiners. My main professional/research interests are related to contaminant hydrogeology and karst hydrogeology. Currently, I live in Belfast, where I am working on a wide range of different projects at Tetra Tech as a senior hydrogeologist. Some recent examples include (ground)water quality, probabilistic quantitative groundwater risk assessment, lowland calcareous fens, constructed wetland projects, etc.



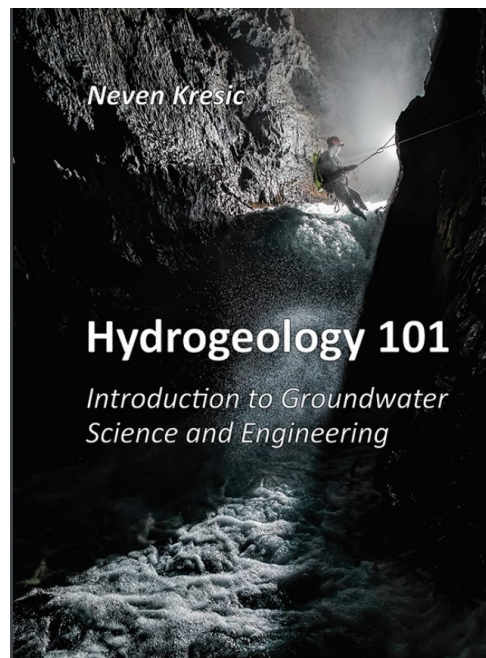
We welcome Luka to our group and we hope he will be involved and active in the commission activities.

Book to download

Our old and very well-known friend - Neven Kresic finished writing his comprehensive book titled "Hydrogeology 101", and offered all KC members to download it for free. The link is: <https://www.un-igrac.org/resource/hydrology-101-introduction-groundwater-science-and-engineering> and you can find it also on our website. The book is a college textbook introducing basic concepts in groundwater science and engineering with 16 lectures, the duration of a typical one or two-semester course at American universities. It covers introduction to hydrogeology, groundwater use, principles of groundwater flow, aquifers and aquitards, groundwater recharge and discharge including springs, groundwater chemistry, groundwater contamination and remediation, field investigations, groundwater in

water supply, and guest lecture on groundwater drought in California by Alex Mikszewski.

We congratulate Neven for his in-depth book, and want to thank him for his willingness to share his knowledge with us.



Study of Jadro spring and call for papers to a special issue

Our friend Ognjen Bonacci sent us some interesting information regarding a large karst spring (Jadro Spring), located near Split, Croatia, which is now in danger of damage. This spring can be seen as a case study, where a high-discharged karst spring serving a big city is in danger, and what steps are needed to protect it for the future generations. It should also be mentioned that the upcoming Geotrip organized by the Karst Commission will include a visit to Jadro Spring.



A public forum on the state of Jadro Spring, its catchment protection, and the water supply infrastructure was held in January 2023 in Split. This spring with an average annual discharge of 9.80 m³/s and measured minimum and maximum discharges of 3.65 m³/s and 70.1 m³/s respectively, serves as a source of drinking water for over 300,000 people in Split and has served in this capacity since Roman times. The forum aimed to raise awareness of the importance of Jadro spring and the need to preserve it for future generations. The forum brought together experts, residents and government officials to discuss ways to ensure the sustainable use and protection of Jadro springs as a critical resource for the community. The topics discussed included the hydrology of the spring, the vulnerability of the karst aquifer, pollution risks, catchment area protection, infrastructure improvements to water quality, and methods for monitoring the chemical and microbiological safety of drinking water. Ognjen Bonacci presented evidence that the static reserves of the karst aquifer supplying the water are significant, and they do not allow the minimum flow to fall below 3.6 m³/s even after long dry periods. Furthermore, he emphasized that the connected system of karst channels is very likely constantly below the minimum groundwater level, and therefore, constantly submerged. These findings are encouraging in light of climate change because they indicate significant reserves of drinking water and its future availability in sufficient quantity. Some interesting findings on the pharmaceutical profile of the water were presented by Valerije Vrcek from the Faculty of Pharmacy and Biochemistry, University of Zagreb.

The following link shares the presentations of the forum held:

<https://lnkd.in/dPDZf7hb>

Following this public forum, Ognjen invites members to submit papers for a special issue on extreme water-related phenomena in karst regions (Ognjen Bonacci and Ivo Andric are the guest editors). The focus of this issue is to highlight the unique challenges posed by water-related extreme events in karst terrains, including flash floods, droughts, water scarcity, landslides, sinkhole collapse, etc. Original research articles, review articles, and case studies that address the impacts of extreme events on water resources, infrastructure and communities in karst regions are suitable for publication. Topics of interest include, but are not limited, to past and recent case studies, hydrological modeling, vulnerability, and risk assessment, early warning systems, and adaptation strategies. More information at:

<https://link.springer.com/collections/gbbejehecj>

UPCOMING KC EVENTS

Approaching soon: KC meeting on the 17th Sinkhole Conference: 27-31 March 2023

The 2023 meeting of the IAH Commission on Karst Hydrogeology is planned for Wednesday, 29 March 2023, during the 17th Sinkhole Conference. The Sinkhole Conference (full name: Multidisciplinary Conference on Sinkholes and the

Engineering and Environmental Impacts of Karst) is a traditional karst science event in the USA, organized since 1984. In 2023, the event is planned in Tampa, Florida, scheduled for 27 – 31 March 2023 at the University of South Florida campus. More details on <http://www.sinkholeconference.com>

10th 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.

Keep in mind that the number of participants is limited so hurry up to register.

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

New papers recommended by the Karst Commission

See the three articles listed below, one deals with ancient spring tunnels in karstic layers in Israel, and the second was written by two of our friends - Attila Kovacs and Zoran Stevanovic and describes an innovative methodology for the prediction of spring hydrographs, based on regional climate model (RCM) projections. The results confirm that this methodology can be successfully applied to spring-discharge prediction. This also offers a new prospect for wider application in the study of karst aquifers and their behavior under different climate-change scenarios. In the third paper, written by a Chinese group, a theoretical model was proposed to simulate discharge periodic variation.

Yechezkel, A., Frumkin, A., & Tzionit, S., 2022. Ancient spring tunnels of Jerusalem, Israel: physical, spatial, and human aspects. *Environmental Archaeology*, 27(3), 323-341. <https://doi.org/10.1080/14614103.2021.1888613>

Kovacs, A., Stevanovic, Z., 2023. A combined stochastic–analytical method for the assessment of climate change impact on spring discharge. *Water*, 2023, 15 (4), 629. <https://doi.org/10.3390/w15040629>

Open access to the article is via: <https://www.mdpi.com/2073-4441/15/4/629>

Guo, X., Li, J., Zeng, Y., Jiang, C., Zhou, H., & Huang, K., 2023. A theoretical model for simulating periodic processes of intermittent karst springs considering changed

recharge rates into siphon cavity. Journal of Hydrology, 617, 129017.
<https://doi.org/10.1016/j.jhydrol.2022.129017>

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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