



Union International of Speleology

Commission of Karst Hydrogeology and Speleogenesis

## 2013-2017 Activity Report

### Background and Goals

The UIS Commission on Karst Hydrogeology and Speleogenesis (KHS Commission) started in 1994 as a Working Group with the same name. In 1997 it had been upgraded to the Commission by the UIS General Assembly (ICS-12, Switzerland). The Commission had been re-approved for the periods of 2002-2005, 2005-2009, 2010-2013, and 2013-2017 by the UIS General Assemblies at the ICS-13 held in Brazil (2001), ICS-14 held in Greece and ICS-15 held in USA (2009), and ICS-16 held in Czech (2013).

*The principal goal of the Commission is to disseminate information and promote scientific co-operation and research in the field of karst hydrogeology, with special emphasis to speleogenesis as the core problem of the permeability development in soluble rocks and of the evolution of karst aquifers.*

The Commission promotes researches in the field in three principal ways:

- 1) By sponsoring and organizing a framework for communication and information exchange between interested workers through different means, including web site, electronic and printed circulars, journals, etc.
- 2) By identifying specific priority topics (specific objectives) and running respective time-defined projects aimed to promote researches in specific areas and result in fundamental publications on these topics.
- 3) By sponsoring and assisting in organization of scientific meetings, as well as thematic symposia and sessions at large scientific conferences and congresses.

### Membership

The membership in the KHS Commission is open to any researcher interested in its activity, sharing its goals and registered to the Speleogenesis website. **Currently (as for July 5<sup>th</sup> 2017), 1111 researchers from 90 nations have registered at the website and are considered as affiliate members of the Commission** (this number was 865 before the previous Congress in 2013). The members regularly receive e-mail notifications and circulars on various aspects of the Commission activity and have an access to a number of services and tools of the Speleogenesis website.

### The Commission Bureau and officers

The Executive Bureau of the KHS Commission was formed in 2002 and consisted of 21 members from 10 nations. In 2013, the Commission had adopted some changes in its structure and management, and the Bureau had been expanded to consist of 40 members from 15 nations:

Alexander, Calvin; USA  
Audra, Philippe; France  
Auler, Augusto; Brazil  
Blackeagle, Cory; USA

Boston, Penny; USA  
Covington, Matthew; USA  
De Waele, Jo; Italy  
Doctor, Daniel; USA

Dreybrodt, Wolfgang; Germany  
Dublyansky, Yuri; Austria  
Eröss, Anita; Hungary  
Faulkner, Trevor; UK  
Ford, Derek; Canada  
Forti, Paolo; Italy  
Frumkin, Amos; Israel  
Gabrovsek, Franci; Slovenia  
Gines, Joaquin; Spain  
Goldscheider, Nico; Germany  
Groves, Chris; USA  
Gunn, John; UK  
Hauselmann, Philipp; Switzerland  
Jeannin, Pierre-Yves; Switzerland  
Kempe, Stephen; Germany  
Klimchouk, Alexander; Ukraine

Kranjc, Andrej; Slovenia  
Lauritzen, Stein-Erik; Norway  
Lowe, David; UK  
Mihevc, Andrej; Slovenia  
Myloie, John; USA  
Osborne, Armstrong; Australia  
Palmer, Arthur; USA  
Plan, Lukas; Austria  
Sasowsky, Ira; USA  
Schindel, Geary; USA  
Schwartz, Benjamin; USA  
Sustersic, France; Slovenia  
Veni, George; USA  
White, Susan; Australia  
White, William; USA  
Worthington, Stephen; Canada

The members of the Executive Bureau (“core members” of the Commission) supervise the Commission activity and vote on all related questions. Also in 2013, an electronic voting has been conducted to elect the Commission officers for the period of 2013-2017. Alexander Klimchouk (Ukraine) was re-elected as the President, and Philippe Audra (France) and Jo De Waele (Italy) were elected as Vice-Presidents. These voting results have been approved by the UIS General Assembly at the ICS-16 in Brno.

## **Speleogenesis.info – a scientific network**

The major role of the KHS Commission is to facilitate an exchange of information and communication between researchers and teams and to maintain a favorable environment for the emergence of various collaboration initiatives and research projects.

The Commission efficiently performs this role by developing and maintaining a web-based portal **Speleogenesis.info (scientific network)** (<http://speleogenesis.info/>). The site has become a major hub of activity and information not only for the KHS Commission but for much wider circles of scholars and institutions involved into karst and geospeleology studies. In 2012, the IAH Commission on Karst Hydrogeology has officially joined the UIS KHS Commission in supporting the Speleogenesis.info website, which is now maintained as a joint project of the two commissions.

During the last year, work is underway to prepare the translation of the website for a new, technologically advanced platform. This work is still ongoing and the launch of a new website is expected this fall.

On behalf of the Commission, I'd like to extend our thanks to the Speleogenesis webmaster Alexey Kopchinskiy (Austria) for his outstanding continued work on the development and technical maintenance of the Speleogenesis website.

## **HypoKarst Project**

During the period of 2013-2017, the Commission continued its HypoKarst Project (started in 2007), aimed to coordinate and promote hypogene karst and speleogenesis research. The main objective of this project is to advance our understanding of solution conduit and void development in those parts of the sedimentary cover that lie below the domain of shallow unconfined groundwater flow systems. The HypoKarst Project also aims to raise an awareness of

researchers and practitioners about the importance, specific nature, and characteristics of hypogene karst, and to coordinate research efforts in the field. The project progressed through several major events and publications, conducted during the reporting period (see below).

## Scientific Meetings

During the reporting period the KHS Commission has sponsored / co-organized several important scientific meetings:

**International Symposium on Hierarchical Flow Systems in Karst Regions**, held at the Eotvos Lorand University Budapest, Hungary, in 4-7 September 2013 (co-sponsored by the IAH Karst Commission and the UIS KHS Commission). The Symposium was attended by 140 participants. The abstract & field guidebook can be downloaded via this link: [http://speleogenesis.info/directory/karstbase/pdf/seka\\_pdf13525.pdf](http://speleogenesis.info/directory/karstbase/pdf/seka_pdf13525.pdf);

**International Conference on Hypogene Cave Morphologies**, held at the Gerace Research Centre (GRC) on San Salvador Island, The Bahamas, 2-7 February 2014 (co-sponsored by the US Karst Water Institute and the UIS KHS Commission). The paper and abstract book can be downloaded via this link: [http://karstwaters.org/wp-content/uploads/2015/04/SP18\\_Hypogene1.pdf](http://karstwaters.org/wp-content/uploads/2015/04/SP18_Hypogene1.pdf);

**International Conference on Groundwater in Karst**, held at the University of Birmingham, UK, 20-26 June 2015 (co-sponsored by the IAH Karst Commission, IGCP-598 and the UIS KHS Commission). Details on this conference can be found via this link: <http://www.birmingham.ac.uk/generic/kgatb/index.aspx>;

**International Conference Deep Karst 2016: Origins, Resources, and Management of Hypogene Karst**, held at Carlsbad, New Mexico USA, 11-14 April 2016, (organized by the National Cave and Karst Research Institute on behalf of the UIS KHS Commission). The 203-page proceedings volume containing 31 peer-reviewed papers by scientists from 10 countries can be downloaded via this link: [http://scholarcommons.usf.edu/deepkarst\\_2016/2016proceedings.pdf](http://scholarcommons.usf.edu/deepkarst_2016/2016proceedings.pdf).

The KHS Commission members also participated and presented papers at a number of other scientific meetings on karst hydrogeology and general speleology.

## Publications

During the last four years, the Commission members have produced several hundred papers in various international journals, books and conference proceedings. Many of these publications are included in KarstBase bibliography system (<http://speleogenesis.info/directory/karstbase/>).

Major volumes prepared by the Commission members are as follows:

**Klimchouk, A., Sasowsky, I, Mylroie, J., Engel, S.A., Engel A.S. (Eds.), 2014. Hypogene Cave Morphologies.** Karst Water Institute, USA, 103 pp. ([http://karstwaters.org/wp-content/uploads/2015/04/SP18\\_Hypogene1.pdf](http://karstwaters.org/wp-content/uploads/2015/04/SP18_Hypogene1.pdf)).

**Chavez, Todd, and Reehling, Pete (Eds.), 2016. Proceedings of DeepKarst 2016: Origins, Resources, and Management of Hypogene Karst.** NCKRI, Carlsbad, NM, 203 pp. ([http://scholarcommons.usf.edu/deepkarst\\_2016/2016proceedings.pdf](http://scholarcommons.usf.edu/deepkarst_2016/2016proceedings.pdf)).

**Klimchouk, A., N. Palmer, A., De Waele, J., S. Auler, A., Audra, P. (Eds.), 2017. Hypogene Karst Regions and Caves of the World.** Springer, 970 pp. (<http://www.springer.com/cn/book/9783319533476>).

The latter book, consisting of 61 chapters and presenting a global overview of hypogene karst regions and caves, is a major effort of the Commission during the last years.

In 2017, arrangements were made, and the Call for Papers was released, for a Special Issue of *Geofluids* (Wiley-Hindawi) titled “**Focused Reactive Fluid Flow in the Upper Crust: Processes and Manifestations of Hypogene Karstification**”, to be edited by the Commission members Alexander Klimchouk, Yuri Dublyansky, Serdar Bayari, and Bogdan Onac. The deadline for paper submission for this volume is October 27, 2017, and the expected publication date is February 2018.

### **Cooperation with other karst organizations**

The UIS KHS Commission enjoys an excellent collaboration with the IAH Karst Commission (co-chairs Dr. Nico Goldscheider and Dr. Neven Kresic). Several Commission members were involved in the IAH-supported WOKAM (World World Karst Aquifer Mapping) Project.

In 2013-2014 the KHS Commission strongly supported the effort to create the Karst Division of the Geological Society of America, culminating in its formal establishment in 2014. Several Commission members (Cory Blackeagle, George Veni, Calvin Alexander, and Penny Boston) were instrumental in this effort.

### **Sponsors**

During the reporting period, the UIS KHS Commission had no external sponsorship. UIS has provided USD 150 a year in support of the Speleogenesis website hosting.

### **Closing Remarks**

The UIS KHS Commission continued to be very active during the reporting period. It has successfully performed its role in advancing studies in the field of karst hydrogeology and speleogenesis and in fostering scientific cooperation in the field. Intense publication and organizational activity of many Commission members have successfully promoted the roles of speleogenetic studies in karst hydrogeology, reservoir characterization, and geological engineering. The importance of speleogenetic studies is getting increasingly recognized in the broad geoscience community.

Many initiatives and projects of the KHS Commission are ongoing and are projected into future. The topic remains fresh and intensely evolving. Therefore, the Commission should continue its work for the next period.

After serving as a Commission President since its establishment in 1997, I am resigning and will not run for this position for the next period. My attempt to organize an electronic election of Commission officers prior the Congress in Sydney was not successful as no nominations for a President and Vice-Presidents have been received after the call released on 12 June, 2017. It remains, therefore, the task of a Commission meeting during the upcoming Congress to appoint the officers and give a new impulse to the Commission activity.

### **Acknowledgements**

I am deeply indebted to many colleagues, especially to the Commission Bureau members, for their strong support, encouragement, and cooperation in pursuing the Commission goals and tasks.

*Alexander Klimchouk,*

President, the Karst Hydrogeology and Speleogenesis Commission of UIS

5 July 2017