

Report on

IAG Regional Conference on Geomorphology

"Geoheritage and Geodiversity"

Cappadocia, Türkiye, 12–14 September 2023

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IAG Intensive Course for Young Geomorphologists

"High Resolution Mapping and Cosmogenic Dating of Fluvial Landforms"

Cappadocia, Türkiye, 15–16 September 2023

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IAG RCG 2023– Cappadocia

The IAG Regional Conference on Geomorphology, themed "Geoheritage and Geodiversity," was held from Sep 12–14, 2023, at Nevşehir Hacı Bektaş Veli University, bringing together experts, researchers, educators, and students from around the world to discuss and exchange ideas on various aspects of geomorphology, with a special focus on geoheritage and geodiversity. This report aims to provide an overview of the conference, highlighting key themes, presentations, discussions, and the IAG intensive training course for Young Geomorphologists (YGs), a much-anticipated event on my schedule for this year. The conference was organised by the Turkish Society for Geomorphology and hosted by the Nevşehir Hacı Bektaş Veli University, located in Nevşehir, the heart of Cappadocia.



Pic 1. Inaugural Ceremony of RCG-Cappadocia

I am extremely grateful to the Selection Committee appointed by the IAG for providing the grant for Young Geomorphologists (YGs) to attend this event. This forum gives the chance to get feedback on own research from renowned academics and researchers throughout the world. It is a platform to



exchange knowledge, new ideas, technological innovations and collaborations. I was one of the 11 YGs funded by IAG in this RCG- Cappadocia 2023.

The conference began with an inaugural session (Pic 1) featuring the role of IAG by the president, Prof. Sunil Kumar De, followed by the distinguished speakers, who emphasised the importance of geoheritage and geodiversity delineation and preservation. They highlighted how understanding and conserving geomorphological features are crucial for our planet. This was followed by an invited talk by Dr. Warren Eastwood on Central Türkiye's Nar Lake Core Records. There were three parallel sessions based on various aspects of geomorphology. So, one had the choice to hear the desired one. My presentation (Pic 2.a) was scheduled for the first day of the first session in Hall B under the session of 'Marine and Coastal Geomorphology/Wetlands'. That session was chaired by Prof. Colin D. Woodroffe. My presentation went well, and I received really good suggestions as well as questions from the audience. I was honoured to jointly chair a session with Caterina Basile and had a wonderful experience altogether (Pic 2.b). The four presenters in that session were from Australia, Romania, Croatia, and India. Of them, Prof. Woodroffe's presentation on the Holocene sea-level contrast and the responses of the corals of the Great Barrier Reef was most thought provoking.



Pic 2. Pictures during the 2023 IAG RCG at Nevşehir Hacı Bektaş Veli University Congress and Culture Centre, Türkiye. (a) I am Presenting an oral paper during the technical session and (b) chairing a session with Caterina Basile in a parallel session on Marine and Coastal Geomorphology/Wetlands in Hall B.

After the session, I had a long discussion with him regarding the evolution of the Late Holocene chenier ridges in Eastern India. I became enriched to receive suggestions and good wishes from him. Being a researcher of coastal geomorphology, it has always been my dream to meet pioneers of coastal geomorphology since my MSc degree. Thanks to IAG, in Cappadocia, I was able to fulfil this desire partially. I also had interactions with other eminent researchers (Pic 3) from different parts of the world and different branches of geomorphology. I gained new points of view and ideas about different physical landscapes and their influence on human life.





Pic 3. My interaction with some eminent scholars and professors during the conference and the intensive training: (a) with Prof. Colin D. Woodroffe, (b) Prof. Efthimios Karymbalis, and (c) Prof. Monique Fort in the conference again after the IAG conference in New Delhi in 2017. (d) With Prof. Mehmet Akif Sarıkaya during the field.

In addition to the oral sessions, the conference's postal sessions were noteworthy. These were in different time slots during the morning and evening coffee breaks. The interactions with the poster presenters enriched me with a number of new ideas, concepts, and methodologies.

However, in my opinion, it would have been better if the tradition of awarding the YGs after the opening ceremony on the first day had been followed.

IAG Intensive Course for Young Geomorphologists

As an IAG YGs grant holder (Pic 4a), I got the opportunity to attend the intensive course in the IAG RCG Cappadocia (Pic 4b). The post-conference IAG intensive course on 'High Resolution Mapping and Cosmogenic Dating of Fluvial Landforms' was immaculately arranged by Prof. Mehmet Akif Sarıkaya from Istanbul Technical University (ITU). The lectures of the first part organised on Day-1 covered the basics of cosmogenic dating, followed by the method and sampling strategy for cosmogenic dating using 36Cl (Chlorine-36) and 10Be (Beryllium-10). The lecture also covered various topics like faulting, uplifting, and movement along the Ecemiş Fault in the Central Taurus, evolution and evidence from river terraces of the Yalak River to demarcate the fault line, and the methods for assessing the rate of movement from the cosmogenic dating in these riverine terraces of the Central Taurus.





Pic 4. (a) A group of IAG grant holders with Prof. Efthimios Karymbalis. (b) Group photo of the IAG Young Geomorphologists in the IAG Intensive Course for Young Geomorphologists along with other participants who opted for the course.



Pic 5. Prof. Cengiz Yıldırım describing the different terrace surfaces (Y1, Y3, Y4) of the Yalak Fans on the Ecemiş Fault zone. The Y2 surface is not in the present photograph. The left side of the photograph is south-east, and the right side is north-west.

On the second half of Day-1, Mr. Aydogan Avcioglu from ITU presented on the 'Satellite and Unmanned Aerial System (UAS)-based advanced geomorphic mapping' in a simple way and performed Google Earth Engine (GEE) processing of the indices (like the Normalised Difference Vegetation Index) and concluded by discussing applications of the GEE. Despite the lengthy lecture



sessions, the training's first day's activities were extremely engaging because they served as warm-up for the next day's field trips.

The field trip on Day-2 consisted of visits to the Ecemiş Fault Zone (Pic 5), terraces of the Yalak River (as proof of faulting), the Saddle, and Sultansazligi Wetland. On the way, Prof. Akif demonstrated the route and also described the formation of Hasandağı, a volcanic mountain clearly visible to the west of our route. Prof. Mehmet Akif Sarıkaya led our group on this day and introduced us to the complex geomorphic characteristics of the Cappadocia region. Prof. Cengiz Yıldırım was in another vehicle with participants other than the YGs. There were multiple stops enroute where the structural units and related topological expressions were systematically explained.

We visited the first spot by hiking for about 30 minutes after deboarding from our bus. Prof. Cengiz Yıldırım described the mechanism and signs of the Ecemiş Fault in the terraces (Pic 5). He also showed another fault in the base of Mount Demirkazık (Pic 6.a) and the location of a saddle in the valley (Pic 6.b). He helped me to identify some samples as breccia (Pic 6.c) and helped also to collect a sample (Pic 6.d) for cosmogenic dating from the largest bolder on the top of the site. Later, Mr. Aydogan Avcioglu tried to fly an Unmanned Aerial Vehicles (UAV) (Pic 6.e), but the windy condition was not suitable for flying the small UAV. Towards the end of the fieldwork, we got a view of Erciyes Dağı from the Sultansazligi Wetland (Pic 6.f) but were unable to see Mt. Erciyes and its moraines as designed due to a shortage of time and planned to return to Nevşehir via Urgup.

Despite no laboratory analysis or hands-on training could be provided, the session was interesting and I learned a lot about the new method of cosmogenic dating.

The Young Geomorphologists Intensive Course and the Conference were both very successful. The young geomorphologists got along well despite coming from five different nations — Brazil, Croatia, Greece, India, and Italy. I believe that this chance for dialogue will open up chances for initiating several collaborative projects in future.

For this successful event, I sincerely thank Prof. Cengiz Yldrm, his team, and Nevşehir Hac Bektaş of Veli University. I also express my gratitude to Prof. Sunil Kumar De, President of the IAG, and the other IAG Executive Committee members for giving me the opportunity to attend the conference and the training programme.





Pic. 6. (a) The north face of Mount Demirkazık, the highest point in the Central Taurus (3,756 m), with an exposed fault in its front (b) Saddle in the valley near Demirkazık village. (c) A breccia sample I collected. (d) Sample collection for cosmogenic dating by Prof. Cengiz Yıldırım and demonstration by Prof. Mehmet Akif Sarıkaya. (e) Preparation for UAV survey for high-resolution mapping: due to windy condition, further operation was not possible. (f) View of the Erciyes Volcanic Mountain or Erciyes Dağı, Aladaglar Region, from the Sultansazligi Wetland National Park.