

**PRESS RELEASE**

**Groundwater in the spotlight**

**Neuchâtel, 4 September 2024. Groundwater will take centre stage from 8 to 13 September at the IAH World Groundwater Congress, which will bring together more than 1,100 specialists from 80 countries in Davos, Switzerland. Organised by the Centre for Hydrogeology and Geothermal Energy at the University of Neuchâtel (CHYN), the Swiss Hydrogeology Society (SHS) and the International Association of Hydrogeologists (IAH), the world event will assess the future of this vital resource, in the face of global warming, pollution and melting glaciers.**

After Asia and Africa, it's Europe's turn to host the World Groundwater Congress. Switzerland, Europe's water tower was not only chosen because of its central position on the continent, but also because it attracts specialists in the field: enthusiasts of mountains, glaciers, rivers and natural springs. The renowned resort of Davos, located in the heart of the Graubünden Alps, offers all of these natural attributes.

**Complex interactions**

'To anticipate future trends, we need to improve our understanding of how groundwater interacts with soils, glaciers, snow, rivers and lakes, and how it reacts to extreme events, triggered by climate change,' argues Daniel Hunkeler, Professor at the CHYN and Head of the Congress Organising Committee.

In addition to the over 60 scientific sessions taking place during the conference, thematic debates are organized to foster the dialogue between scientists and practitioners and to highlight some of the most pressing issues. For example, Tobias Jonas, from the Swiss Federal Institute for Forest, Snow and Landscape Research WSL (Davos site) and Laurent Somers, assistant professor at Dalhousie University (Canada), will discuss climate change in alpine regions and its consequences for the cryosphere, which includes glaciers, snow and permafrost. How can we quantify seasonal variations in resources and the contribution of snowmelt in the future?

**The situation in Switzerland**

On 12 September, the *Swiss Day* will take place. This dedicated day will focus on issues of high importance to Switzerland, but also other regions facing similar challenges. The programme will begin with a debate on preserving underground resources for future generations. Is it safe to pump water and drink it without any other form of treatment, given the presence of pollutants such as PFAS?

A second panel discussion will focus on how to exploit the subsoil considering the wide range of users and stakeholders. Should the extraction of groundwater be prioritized over the extraction of heat (geothermal energy) or the storage of energy, the mining of raw materials or the disposal of waste? Examples from the Netherlands, Canada and Switzerland will be presented.

Sidebar

## **Research at CHYN**

The CHYN leads the organisation of this world congress. The CHYN is one of the largest and most renowned research institutes in the world dedicated to groundwater research and teaching. Here are a few examples: Landon Halloran, Senior Lecturer, and his team are developing new methods for measuring variations in groundwater storage without having to drill. 'By measuring very small variations in gravity which are imperceptible to humans, we can indirectly assess variations in groundwater storage,' explains the researcher. Gravity measurements have enabled us to quantify the loss of groundwater reserves during warm periods in the Vallon de Réchy (VS), as well as the annual loss of permafrost in the rock glaciers of Canfinal and Murtèl (GR).

### **The hydraulics of groundwater flow**

Postdoctoral student Tanguy Racine and Professor Philippe Renard are participating in a European research project focusing on karst. The goal of this project is to predict flow and transport of pollutants in karstic systems. Karst aquifers, providing drinking water to 25% of the world's population, are notoriously difficult to manage because of their extremely rapid drainage capacity.

### **Water in conflict zones**

To give another example, Doctoral student Saeed Mhanna, working in the Hydrogeological Processes Laboratory under the supervision of Professor Philip Brunner, is exploring how conflicts influence groundwater resources in Syria. Due to limited access to the field, we heavily rely on remote sensing data and machine learning approaches which allow us to assess how the collapse of irrigation infrastructure during the war affects land-use and groundwater resources,' explains the researcher.

### **For more information:**

The CHYN website: [www.unine.ch/chyn](http://www.unine.ch/chyn)

The World Groundwater Congress: [www.iah2024davos.org](http://www.iah2024davos.org)

Swiss Day at the World Groundwater Congress: [www.iah2024davos.org/swissday/](http://www.iah2024davos.org/swissday/)

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