TECHNISCHE UNIVERSITÄT WIEN

INTRODUCTION OF MEMBERS

You are an expert in the field of remote sensing, a field of research in which many exciting new findings and applications have emerged from Austria in recent years. What do you enjoy most about your work in this up-and-coming field?

Remote sensing enables us to observe large-scale processes such as changes in soil and vegetation water content. However, soil and vegetation water content are subject to a wide variety of temporal and spatial changes that cannot be recorded using conventional measurement methods in the field. Thanks to the enormous technical progress made in recent years, for example with the European Space Agency's Sentinel satellites, we can now generate high-resolution data sets in a 10m x 10m grid with a temporal resolution of 2 to 3 days. When I started my research in this area in 2009, the spatial resolution was still 25km x 25km. On the other hand, a data point was available almost every day for soil moisture measurements. I really enjoy researching at this dynamic interface between environmental observation and pioneering technology and increasing our understanding of important processes in our systems.

Your research deals with very specific processes in the climate system, which, however, have direct and serious effects on human systems at a local and global level. How does interdisciplinary and transdisciplinary collaboration work in your field of research and how can it be improved?

This collaboration, especially the exchange with potential users, is one of the enormous future challenges in my field. Although the data we generate is freely accessible and of great benefit to experts in the field, the sheer volume of data also makes it technically very challenging to use. There is still a long way to go before individual farmers use our findings. However, if we can better explain to stakeholders such as NGOs or large agricultural enterprises how extensive our understanding already is and how much potential for their work lies dormant in our data, we will already be a big step further.

Name: Mariette Vreugdenhil

Institution: TU Vienna

Field: Remote sensing of soil moisture and vegetation dynamics

Role in the member organization: Senior Scientist at Vienna University of Technology

Technical universities in particular are often well networked with the private sector. However, a strong research network is also crucial for a scientific approach to the climate crisis. How did you first come into contact with the CCCA and how do you intend to improve cooperation in the future?

A few years ago, I set up a Green Team in our department at TU Wien to make in-house processes such as coffee purchasing more sustainable. It was through this Green Team that I first came into contact with the CCCA. TU Wien has also been working with the CCCA for a long time through the Energy and Environmental Research Coordination Center.

However, as academics we are under enormous pressure to publish, we have to acquire research funding and organize teaching. As a result, there is often hardly any time left for projects close to our hearts within the network. In order to improve the opportunities for fruitful collaboration, it is therefore particularly important to reduce pressure and jointly create synergetic structures, such as standards for stakeholder processes, that make work easier for everyone.

What do you personally and professionally see as the biggest challenges in the fight against climate change?

From a professional point of view, I see the strongest leverage in interdisciplinary cooperation between technical and scientific research and the social sciences. Knowledge is gained in different ways in these disciplines and there is often a lack of understanding for the other subject. On a personal level, it is difficult for me at times not to give up motivation and hope for real change, especially with regard to the nature of the debate in society and in the media.