

Harry Otten Foundation: Activity Report 2023

29 November 2023

Activities in 2023:

The Harry Otten Prize for Innovation in Meteorology was awarded for the sixth time in 2023 at the 2023 Annual Meeting of the European Meteorological Society (EMS) in Bratislava, Slovakia. The winner was Hamish Pritchard from the British Antarctic Survey of the U.K. His idea, *Lakes as snowfall sensors: Solving the precipitation problem in the mountain cryosphere*, entails that frozen lakes can be used as pressure-sensing surfaces to yield accurate observations of the water content of snowfall simply, cheaply, autonomously, and over large areas. With standard water-pressure sensors submerged on a lakebed, the mass of winter snow precipitation as it reaches the lake's frozen surface can be recorded, while avoiding biases that appear with other instruments that interact with snow as it falls or accumulates.

For this prize round, the Harry Otten Foundation (HOF) received 18 applications for the prize with lead authors from at least 14 different countries in Europe, Africa, Australia, and the U.S.A. Five applications were selected for the second round. From these remaining five proposals, three were selected for the final round. After the oral presentation of the proposals that took place in a special session of the EMS Annual Meeting, the jury selected the winner of the prize from the three finalists. The other two finalists were as follows.

Philipp Gasch from the Karlsruhe Institute for Technology and his co-workers James Kasic and Zhien Wang (both at University of Colorado) presented their idea called *A novel airborne Doppler lidar system design for high-resolution wind measurements*. They propose a new airborne Doppler lidar onboard research aircraft, aiming to provide higher measurement accuracy and spatial resolution, in combination with a simplified and more robust system design. Its high resolution and accuracy allow for the retrieval of turbulence properties, such as vertical wind variance and turbulent kinetic energy.

A team composed of Irene Schicker, scientist at GeoSphere and Marianne Bügelmayer-Blaschek and Jasmin Lampert (both at the Austrian Institute of Technology) proposed to refine seasonal forecasts in their idea *Weather impacts on renewables & agriculture: explainable AI for hyperresolution downscaling for S2S*. While extended range and seasonal forecasts are rapidly developing, they lack the spatial resolution necessary for applications operating at a smaller scale. Since dynamic downscaling is computationally expensive, they aim to develop a novel, computationally inexpensive, transferable, and physics-aware post-processing methodology and establish trustworthiness within the scientific community and the public, and assess transferability to untrained regions.

The following formal HOF Board Meetings were held:

Video telecons: 15 February 2023, 29 March 2023, 4 April 2023, 20 June 2023, 2 November 2023
In-person & via video telecon: 4 September 2023 (in Bratislava)

Board Member María Carmen Llasat resigned from the HOF Board of Directors on 1st March 2023. The board extended an invitation to Samira Khodayar Pardo, who then joined the board on 1st June. Samira is the Head of the Department of Meteorology and Climate at the Mediterranean Centre for Environmental Studies (CEAM, Valencia, Spain) since 2021 and a Distinguished Researcher of Excellence in the CIDEAGENT-GVA Program. Samira will complete the original term of María Carmen per the HOF By-Laws. Subsequently she may potentially serve an additional full three-year term.

31 December 2023 marks the end of the second three-year term for two board members and they must retire from the board in accordance with the board rotation schedule. Both Olivier Boucher and Pamela Emch have served on the board for six years, from January 2018 through December 2023. Olivier succeeded Tanja Cegnar as Communications Lead in January 2020 and Pamela succeeded Leo Kroon as Board Chair in January 2021. Two new board members start their terms on 1 January 2024: Jean-Noël Thépaut (Copernicus/ECMWF; France) and Sue Ellen Haupt (NCAR; USA).

The following persons acted as board members during 2023:

Pamela Emch (Chair), Dennis Schulze (Treasurer), Olivier Boucher, Gert-Jan Steeneveld, María Carmen Llasat (until 1 March 2023), Samira Khodayar Pardo (from 1 June 2023).

All board members and HOF Secretary Andrea Oestreich participated in the board meetings.