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PRESS RELEASE

The Rüdiger Kurt Bode-Stiftung Water Resources Prize goes to Prof. Dr. Harald Kunstmann

The sponsorship prize is endowed with 100,000 Euros - scientist from the Karlsruhe Institute of Technology and the University of Augsburg receives the award

The Rüdiger Kurt Bode-Stiftung is awarding the 2021 Water Resource Prize, endowed with 100,000 Euros, to Prof. Dr. Harald Kunstmann, Chair of Regional Climate and Hydrology at the University of Augsburg and Deputy Director of the Institute for Meteorology and Climate Research - Atmospheric Environmental Research at the Karlsruhe Institute of Technology, the KIT Alpine Campus. With this award, the foundation recognises the outstanding achievements of the prize winner in the field of sustainable water resources management in water-critical, vulnerable regions of the global south, especially for the coupled atmosphere hydrology model systems that he and his team have developed, and for research on sub-seasonal to seasonal predictions (S2S) of water availability.

Harald Kunstmann combines hydrological research with atmospheric and climate research. For many years he has led a working group that develops complex hydrological, atmospheric and coupled regional earth system models and applies them to specific hydrological and climatological case studies. Since the beginning of his scientific career, Harald Kunstmann has had a particular interest in water resource management in regions suffering from water scarcity - one focus is sub-Saharan Africa. Population growth and climate change lead us to expect massive deterioration in water availability in this region. By the end of the century, the population in Africa will grow from the current 1.3 billion to over 4 billion people. This development will be associated with large-scale changes in land use, which - in addition to climate change - will affect regional water availability. With a view to the future and the goals of the 2030 Agenda, Harald Kunstmann's research is therefore of great importance.

In semi-arid regions, large multi-purpose reservoirs simultaneously generate electricity and provide water for irrigated agriculture - so it is crucial for water resources management to be able to better anticipate the coming weeks and months. For a more reliable forecast of drought and flood events,

Harald Kunstmann developed very powerful, regionally adapted sub-seasonal to seasonal (S2S) forecasting systems. For improved nationwide quantification of precipitation, he used the signal attenuation of microwave links from commercial cellular networks for the first time in Germany. His spatially high-resolution and bias-corrected analyses and model simulations allow a detailed description of the full regional water cycle, i.e. compartment-crossing from groundwater to the unsaturated zone, the land surface and the atmosphere.

The reason for awarding Harald Kunstmann the Water Resources Prize 2021 is as follows: “Harald Kunstmann is an excellent scientist and bridge builder between research and practice, who consistently pursues an interdisciplinary, international and solution-oriented approach. He has done pioneering work with the coupled atmosphere-hydrology model systems he has developed. His goals of cloud-based operationalisation and free availability of S2S forecasts are of high social relevance and great benefit for decision-makers, farmers and other water users. Harald Kunstmann's work is expected to have a positive leverage effect on regional water resources management in Africa.

The Board of Trustees of the Rüdiger Kurt Bode-Stiftung selected Harald Kunstmann as the winner from numerous applications on the recommendation of its advisory jury. The award ceremony will take place online on Wednesday, 16 June 2021 from 13:55 to 14:35 as part of the 11th Water Research Horizon Conference. Press representatives and interested parties may participate in the conference after registering in advance (www.water-research-horizon.de/registration). The conference is organised by the Water Science Alliance, an initiative to strengthen and improve the positioning and visibility of water research in Germany and in an international context, focusing on the creation of synergies between the competent authorities and the promotion of young scientists.

The award winner

Prof. Dr. Harald Kunstmann (* 1968) received his doctorate after studying physics from the ETH Zurich and has also conducted research at the University of Bloemfontein in South Africa and the University of Oxford in England. In his view, overcoming poverty and sustainable development are one of the greatest social challenges - which is why he completed a postgraduate course on developing countries in parallel to his dissertation in Zurich. In 1999, as a postdoctorate, he began setting up an hydrology working group at the Fraunhofer Institute for Atmospheric Environmental Research in Garmisch-Partenkirchen. In 2004, in addition to leading the working group, he was also given responsibility for the Regional Climate Systems Department. In 2009, following the Jülich model of the Helmholtz Association, he was appointed jointly with KIT to the newly created Chair for Regional Climate and Hydrology at the University of Augsburg, where another part of his working group has been located since then. Since 2015, he has been the deputy institute director of the KIT Alpine Campus. Harald Kunstmann recently became the founding director of the Centre for Climate Resilience at the University of Augsburg, which was newly established in 2021.

On being awarded the Water Resources Prize, Prof. Dr. Harald Kunstmann says: “I am very happy about this award because it shows that the issue of water resources, especially water scarcity in the global South and sub-Saharan Africa, is receiving much-needed attention. I have been concerned with the problems of developing countries and poor regions since my youth. Sufficient water availability is a prerequisite for sustainable development, and it is becoming increasingly critical in view of a growing population in many regions. I would very much like us as a society to attach more importance not only to climate change but also to water availability, and with this in mind I would like to express my sincere thanks for the award - it is a great motivation for further research in this field.

The prize

Competition for the increasingly scarce resource of water will shape global development in the coming decades. The main reasons are population growth, climate change and unsustainable use of water resources. Today, around one third of the world's population already lives under conditions characterised by moderate to severe water shortages. With its prize, the Bode-Stiftung honours researchers who develop outstanding strategies and concepts for the sustainable use of global water resources. With an endowment of 100,000 Euros, the Water Resources Prize is one of the major German foundation prizes.

The Rüdiger Kurt Bode-Stiftung in the Donors' Association

The foundation was established in 2009 by the Hamburg pharmacist and entrepreneur Rüdiger Bode to promote interdisciplinary research in the field of life and natural sciences. The focus of the foundation's programme, which was launched in 2009, is the Water Resource Prize, which is awarded every three years - for the first time in 2012 to Professor Claudia Pahl-Wostl. The other award winners were Professor Klaus Kümmerer in 2015 and Professor Florian Leese in 2018.

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