

PrePEP 2025

Precipitation Processes - Estimation and Prediction

Oral program

Day 1		Monday 17 March 2025		
	9:30-10:00	Welcome and Introduction: Silke Trömel (on behalf of DFG research unit RealPEP and priority programme PROM) Klaus Sandmann (Vice Rector of the University of Bonn)		
Keynote	10:00-10:30	The amazing journey through an opportunistic satellite sensing system: from the "bad-looking" raw data to the "handsome" precipitation estimate Keynote speaker: Filippo Giannetti (University of Pisa) 1) Filippo Giannetti (University of Pisa)		
Session 1 A		From Classical to Integrated Remote Sensing. New observation strategies for clouds and precipitation (multi-frequency, spectral polarimetry, multi-sensor) Chair 1: Silke Trömel, Chair 2: Christian Chwala		
				Abstract ID
1	10:30-10:45	Weather radar adjustment with pyRADMAN: Experiments with and without commercial microwave links 1) Maximilian Graf* (Deutscher Wetterdienst) 2) Christian Chwala (KIT (IMK-IFU)) 3) Matthias Gottschalk (Deutscher Wetterdienst) 4) Malte Wenzel (Deutscher Wetterdienst) 5) Tanja Winterrath (Deutscher Wetterdienst) 6) Julius Polz (KIT (IMK-IFU))		107
2	10:45-11:00	Tropical rainfall nowcasting with Commercial Microwave Links: opportunities and current limitations 1) Bas Walraven* (Delft University of Technology) 2) Aart Overeem (Royal Netherlands Meteorological Institute) 3) Ruben Imhoff (Deltares) 4) Luuk van der Valk (Delft University of Technology) 5) Miriam Coenders (Delft University of Technology) 6) Rolf Hut (Delft University of Technology) 7) Remko Uijlenhoet (Delft University of Technology)		29

Coffee break		11:00-11:30		
Session 1 A		From Classical to Integrated Remote Sensing. New observation strategies for clouds and precipitation (multi-frequency, spectral polarimetry, multi-sensor) Chair 1: Christian Chwala, Chair 2: Silke Trömel		
	3	11:30-11:45	Urban surveillance camera for urban extreme rainfall estimation 1) Xing Wang* (Nanjing University) 2) Kun Zhao (Nanjing University) 3) Hao Huang (Nanjing University)	83
	4	11:45-12:00	Achievements of the COST Action on Opportunistic Precipitation Sensing (OpenSense) 1) Christian Chwala* (KIT (IMK-IFU)) 2) Vojtěch Bareš (Czech Technical University in Prague) 3) Hagit Messer (Tel Aviv University) 4) Roberto Nebuloni (Consiglio Nazionale delle Ricerche (CNR)) 5) Martin Fencel (Czech Technical University in Prague) 6) Aart Overeem (Royal Netherlands Meteorological Institute) 7) Maximilian Graf (Deutscher Wetterdienst) 8) Remco van de Beek (SMHI, Sweden) 9) Jonas Olsson (SMHI, Sweden) 10) Laura Varga (Budapest University of Technology and Economics) 11) Cristina Deida (Vrije Universiteit Brussel) 12) Jonatan Ostrometzky (Tel Aviv University) 13) Luis Angel Espinosa (Association of Instituto Superior Técnico for Research and Development, Lisbon) 14) Natalia Hanna (TU Wien) 15) Remko Uijlenhoet (Delft University of Technology)	105
	5	12:00-12:15	Rainfall estimation over the San Francisco Bay Area: a new system to infuse microphysical information into QPE 1) V. Chandrasekar (Colorado State University) 2) Renzo Bechini* (Colorado State University, Arpa Piemonte) 3) Sounak Biswas (Colorado State University)	59
	6	12:15-12:30	Deep Learning for Multimodal Precipitation Estimation: From Research to Operationalization 1) Joseph Casey (Vrije Universiteit Brussel) 2) Lesley De Cruz (Royal Meteorological Institute of Belgium, Vrije Universiteit Brussel) 3) Steven Dewitte (Royal Observatory of Belgium) 4) Arthur Moraux* (Royal Meteorological Institute of Belgium) 5) Adrian Munteanu (Vrije Universiteit Brussel)	81
	7	12:30-12:45	Correcting the melting layer effects on rainfall retrievals with a polarimetric vertical profile approach based on a local climatology 1) Raquel Evaristo* (Institute of Geosciences, Meteorology Section, University of Bonn) 2) Julián Alberto Giles (Institute of Geosciences, Meteorology Section, University of Bonn) 3) Alexander Ryzhkov (NSSL, Norman) 4) Silke Trömel (Institute of Geosciences, Meteorology Section, University of Bonn)	89

Lunch break		12:45-14:00		
Keynote		14:00-14:30	Flood forecasting in Bavaria: Organization of the flood information service (HND) and limits of early warning due to model uncertainties discussed on the basis of examples from the 2024 flood event in Swabia Keynote speaker: Natalie Stahl-van Rooijen (Bavarian Environmental Agency) 1) Natalie Stahl-van Rooijen (Bavarian Environmental Agency) 2) Nicolas Dalla Valle (Bavarian Environmental Agency) 3) Joachim Stoermer (Bavarian Environmental Agency)	
Session 5 A			Precipitation and Hydrological Models: Extreme precipitation events Chair 1: Stefan Kollet, Chair 2: Samirasadat Soltani	
	1	14:30-14:45	Revealing the Structure of Precipitation Extremes: a spatio-temporal Wavelet Approach 1) Sebastian Buschow (Institute of Geosciences, Meteorology Section, University of Bonn) 2) Petra Friederichs (Institute of Geosciences, Meteorology Section, University of Bonn) 3) Svenja Szemkus* (Institute of Geosciences, Meteorology Section, University of Bonn)	62
	2	14:45-15:00	Simulating intra-event return period co-occurrences in short-duration intense precipitation events 1) Tabea Cache* (Institute of Earth Surface Dynamics, University of Lausanne) 2) Emanuele Bevacqua (Department of Compound Environmental Risks, Helmholtz Centre for Environmental Research, UFZ, Leipzig) 3) Jakob Zscheischler (Department of Compound Environmental Risks, Helmholtz Centre for Environmental Research, UFZ, Leipzig) 4) Hannes Müller-Thomy (Leichtweiß-Institute for Hydraulic Engineering and Water Resources, Division of Hydrology and River Basin Management, Technische Universität Braunschweig) 5) Nadav Peleg (Institute of Earth Surface Dynamics, University of Lausanne, Lausanne, Switzerland and Expertise Center for Climate Extremes, University of Lausanne)	67
	3	15:00-15:15	Extreme rainfall over West Africa: Current state and projected impacts of climate change 1) Marlon Maranan* (Karlsruhe Institute of Technology) 2) Andreas Fink (Karlsruhe Institute of Technology)	47
	4	15:15-15:30	Comprehending Meteorological Drought in the Tons River Basin, India: A Spatio-Temporal Assessment of Variability and its impact on water resources 1) Samiul Sk* (Jawaharlal Nehru University, New Delhi) 2) S Sreekesk (Jawaharlal Nehru University, New Delhi)	54
Coffee break		15:30-16:00		

Session 5 A			Precipitation and Hydrological Models: Extreme precipitation events Chair 1: Samirasadat Soltani, Chair 2: Stefan Kollet	
Keynote		16:00-16:30	On the importance of precipitation datasets for operational hydrological monitoring and forecasting Keynote speaker: Christel Prudhomme (European Centre for Medium-Range Weather Forecasts (ECMWF)) 1) Christel Prudhomme (European Centre for Medium-Range Weather Forecasts (ECMWF)) 2) Ervin Zsoter (European Centre for Medium-Range Weather Forecasts (ECMWF)) 3) Cinzia Mazzetti (European Centre for Medium-Range Weather Forecasts (ECMWF)) 4) Maliko Tanguy (European Centre for Medium-Range Weather Forecasts (ECMWF)) 5) Jasper Denissen (European Centre for Medium-Range Weather Forecasts (ECMWF)) 6) Gwyneth Matthews (European Centre for Medium-Range Weather Forecasts (ECMWF)) 7) Christoph Rudiger (European Centre for Medium-Range Weather Forecasts (ECMWF)) 8) Peter Salamon (Joint Research Centre) 9) Estibaliz Gascon (European Centre for Medium-Range Weather Forecasts (ECMWF)) 10) Nikos Mastrantonas (European Centre for Medium-Range Weather Forecasts (ECMWF)) 11) Patricia de Rosnay (European Centre for Medium-Range Weather Forecasts (ECMWF))	
	5	16:30-16:45	Prognostic ParFlow Integrated Hydrologic Model Applications at Stakeholder Scale Over Central Europe 1) Klaus Goergen* (Research Centre Juelich) 2) Alexandre Belleflamme (Institute of Bio- and Geosciences (IBG-3, Agrosphere), Forschungszentrum Jülich (FZJ), Jülich) 3) Suad Hammoudeh (Institute of Bio- and Geosciences (IBG-3, Agrosphere), Forschungszentrum Jülich (FZJ), Jülich) 4) Stefan Kollet (Institute of Bio- and Geosciences (IBG-3, Agrosphere), Forschungszentrum Jülich (FZJ), Jülich)	93
	6	16:45-17:00	GSDR: A global sub-daily rainfall dataset for understanding extreme precipitation 1) Amy Green* (Newcastle University) 2) Matt Fry (UK Centre for Ecology and Hydrology) 3) Stephen Blenkinsop (Newcastle University) 4) Hayley Fowler (Newcastle University)	133
	7	17:00-17:15	Hybrid modelling setups for real-time urban pluvial flood mapping 1) Daan Buekenhout* (KU Leuven) 2) Ricardo Reinoso-Rondinel (KU Leuven-KMI) 3) Patrick Willems (KU Leuven)	129

8	17:15-17:30	Evaluating the performance of X-band radars for QPE during heavy rain events in western Germany 1) Daniel Sanchez-Rivas* (Institute of Geosciences, Meteorology Section, University of Bonn) 2) Silke Trömel (Institute of Geosciences, Meteorology Section, University of Bonn) 3) Alexander Ryzhkov (NSSL, Norman)	130
Icebreaker	17:30-21:00		