

 2022
ERAD

Program 29th August - 2nd September 2022

All plenary sessions take place in SALA 1

MONDAY	08:30 - 09:00	WELCOME
	09:00 - 10:20	INT - INTERNATIONAL COOPERATION
	10:20 - 10:30	ERAD SURVIVAL GUIDE
	SALA 1 11:15 - 12:30 SALA 2 11:15 - 12:30	RSP - RADAR SIGNAL AND DOPPLER PROCESSING ORO - OROGRAPHIC PRECIPITATION
	14:15 - 15:45	NWP - RADAR IN NUMERICAL WEATHER PREDICTION
	16:30 - 18:00	QPN - NOWCASTING OF PRECIPITATION
	18:45	ICE BREAKER
<hr/>		
TUESDAY	09:00 - 10:20	HSC - HAIL AND SEVERE CONVECTION
	11:15 - 12:30	SNO - SNOWFALL
	SALA 1 14:15 - 15:45 SALA 2 14:15 - 15:45	HYD- HYDROLOGICAL APPLICATIONS TEC - PHASED-ARRAY AND EMERGING TECHNOLOGIES
	16:30 - 18:45	POSTER SESSION & INDUSTRY EXHIBITION (online)
	<hr/>	
WEDNESDAY	09:00 - 10:20	MIC1 - MICROPHYSICS
	SALA 1 11:15 - 13:00 SALA 2 11:15 - 13:00	MIC2 - MICROPHYSICS NCT - NOWCASTING OF CONVECTION AND THUNDERSTORMS
		SOCIAL EXCURSION SOCIAL DINNER
	19:00	
<hr/>		
THURSDAY	08:30 - 10:30	POSTER SESSION & INDUSTRY EXHIBITION (online)
	11:45 - 12:30	CLI - CLIMATOLOGICAL STUDIES
	SALA 1 14:15 - 15:45 SALA 2 14:15 - 15:45	CAM - HARDWARE, CALIBRATION AND MONITORING AIN - ARTIFICIAL INTELLIGENCE
	16:30 - 18:00	POL - POLARIMETRY
	<hr/>	
FRIDAY	SALA 1 08:30 - 10:15 SALA 2 08:30 - 10:15	QPE - QUANTITATIVE PRECIPITATION ESTIMATION CLU - CLUTTER, INTERFERENCES, INSECTS AND THE LIKE
	11:30 - 13:00	FAS - FREQUENCY-DIVERSITY, AIRBORNE AND SPACEBORNE
	13:00 - 13:30	CLOSURE
	<hr/>	

08:30 ————— 09:00

WELCOME

Bertrand Calpini (Deputy Director, MeteoSwiss)

Claudia Binder (Dean ENAC, EPFL)

Moderated by Alexis Berne and Urs Germann (Chairmen of ERAD2022)

INT - INTERNATIONAL COOPERATION

Chair: Remko Uijlenhoet

9:00 ————— 9:35

Triplet

INT.T1 - OPERA5 – news from the renewal of the production lines

Von Lerber Annakaisa, Nicolas Gaussiat, Günther Haase, Stefan Klink, Hidde Leijnse, Vera Meyer, Christoph Müller, Markus Peura, Milka Radojevic, Klaus Stephan, Lukas Tüchler, Barbara Vodarić Šurija and Elena Saltikoff
Finnish Meteorological Institute, Helsinki, Finland

INT.T2 - Impact based forecasting using radar networks: the high added value of OPERA network for emergency management in times of climate change adaptation

Sempere Torres Daniel, Marc Berenguer and Shinju Park
Centre of Applied Research in Hydrometeorology (CRAHI), Universitat Politècnica de Catalunya (UPC)

INT.T3 - WMO Operational Weather Radar Best Practices Guide preparations and status

Michelson Daniel, Thomas Kane, Hiroshi Yamauchi, Bernard Urban, Mark Curtis, Blake McGuire, Thomas Einfalt, Benjamin Rohrdantz, Donald Rinderknecht and Pekka Rossi
Environment and Climate Change, Canada

9:35 ————— 9:50

INT.T4 - European-wide historic precipitation accumulations based on the OPERA rainfall rate composites collected during 2013-2022

Park Shinju, Marc Berenguer and Daniel Sempere-Torres
Centre of Applied Research in Hydrometeorology, Universitat Politècnica de Catalunya, Spain

9:50 ————— 10:05

INT.T5 - EURADCLIM: The European climatological high-resolution gauge-adjusted radar rainfall dataset

Overeem Aart, Hidde Leijnse, Else van den Besselaar, Gerard van der Schrier, Emiel van der Plas, Jan Fokke Meirink, Hylke de Vries, Geert Lenderink and Lotte de Vos
Royal Netherlands Meteorological Institute (KNMI), Netherlands

10:05 ————— 10:20

INT.T6 - Coherent RFI monitoring in the EUMETNET OPERA radar network

Meyer Vera Katharina, Lukas Tüchler and Annakaisa von Lerber
Zentralanstalt für Meteorologie und Geodynamik (ZAMG), Austria

10:20 ————— 10:30

ERAD2022 Survival Guide

10:30 ————— 11:15

COFFEE BREAK

||| **RSP - RADAR SIGNAL AND DOPPLER PROCESSING - SALA 1**
Chair: Luca Baldini

11:15 ————— 11:30

RSP.T1 - Progressive Pulse Compression: A Promising Solution to the Blind Range Challenge for Solid-State Weather Radars
Salazar Cesar, Boonleng Cheong, Robert Palmer, David Schwartzman and Alexander Ryzhkov
University of Oklahoma - Advanced Radar Research Center

11:30 ————— 11:45

RSP.T2 - Correction of Dual-PRF Velocity for Operational S-band Doppler Weather Radar
Park Soyeon, Sung-Hwa Jung and Kwang-Ho Kim
Weather Radar Center, Korea Meteorological Administration, South Korea

11:45 ————— 12:00

RSP.T3 - Region-based Recursive Doppler Dealiasing (R2D2)–An Operational Algorithm for Difficult Doppler Velocity Retrievals
James Curtis, Monika Feldmann, Marco Boscacci, Daniel Leuenberger, Marco Gabella, Urs Germann, Daniel Wolfensberger and Alexis Berne
Embry-Riddle Aeronautical University, United States

12:00 ————— 12:15

RSP.T4 - Jensen–Shannon Distance-based Filter and Unsupervised Evaluation Metrics for Polarimetric Weather Radar Processing
Una Christine, Cheng Chen and Albert Oude Nijhuis
Delft University of Technology, Netherlands

12:15 ————— 12:30

RSP.T5 - Improved spectral processing for a Ka/Ku-band cloud radar system
Ding Han, Haoran Li and Liping Liu
Nanjing University of Information Science and Technology, China

||| **ORO - OROGRAPHIC PRECIPITATION - SALA 2**
Chair: Martin Hagen

11:15 ————— 11:30

ORO.T1 - Orographic Flow Influence on Precipitation During an Atmospheric River Event at Davis, Antarctica
Gehring Josué, Alexis Berne, Étienne Vignon, Anne-Claire Billault-Roux, Alfonso Ferrone, Alain Protat and Simon P. Alexander
Environmental Remote Sensing Laboratory, École Polytechnique Fédérale de Lausanne, Switzerland and Federal Office of Meteorology and Climatology MeteoSwiss, Switzerland

11:30 ————— 11:45

ORO.T2 - Surface rainfall estimates in mountainous areas inferred from radar volume scans and NWP precipitation profiles
Le Bastard Tony, Fatima Karbou, Nicolas Gaussiat and Olivier Caumont
Météo-France, France

11:45	12:00	<p>ORO.T3 - The altitudinal effect of the radar-gauge errors over Switzerland <u>Ghaemi Esmail</u>, Marco Gabella, Ulrich Foelsche, Ioannis Sideris and Daniele Nerini <i>University of Graz, Austria</i></p>
12:00	12:15	<p>ORO.T4 - Analysis of X-Band Dual Polarization Radar Observations over Multiple Complex Terrain Regions <u>Derin Yagmur</u>, Yagmur Derin, Pierre-Emmanuel Kirstetter, Ioannis Kalogiros, Marios Anagnostou, Emmanouil N. Anagnostou and Jonathan J. Gourley <i>University of Oklahoma, United States</i></p>
12:15	12:30	<p>ORO.T5 - Development of Multi-Radar Multi-Sensor (MRMS) Machine Learning QPE for Complex Terrain <u>Osborne Andrew</u>, Jian Zhang, Micheal Simpson, Stephen Cocks and Kenneth Howard <i>CIWRO, United States</i></p>
<hr/>		
12:30	14:15	<p>LUNCH</p> <hr/> <p>NWP - RADAR IN NUMERICAL WEATHER PREDICTION Chair: Lesley De Cruz</p>
14:15	14:45	<p>NWP.T1 - Current status of SINFONY - the combination of Nowcasting and Numerical Weather Prediction on the convective scale at DWD <u>Blahak Ulrich</u> <i>Deutscher Wetterdienst (DWD), Germany</i></p>
Triplet	14:45	<p>NWP.T2 - Assimilating 3D radar information at convective scales at DWD <u>Stephan Klaus</u>, Ulrich Blahak, Kobra Khosravian, Lisa Neef, Klaus Vobig, Alberto De Lozar, Roland Potthast, Christoph Schraff and Christian Welzbacher <i>Deutscher Wetterdienst (DWD), Germany</i></p>
	14:45	<p>NWP.T3 - Assimilation of Nowcast Objects in the Regional Forecast Model ICON-LAM <u>Neef Lisa</u>, Christian Welzbacher, Ulrich Blahak and Roland Potthast <i>Deutscher Wetterdienst (DWD), Germany</i></p>
	14:45	<p>NWP.T4 - Evaluating and improving the ice microphysics parameterization in the ICON model using triple-frequency Doppler cloud radar observations <u>Kneifel Stefan</u>, Davide Ori, Markus Karrer, José Dias Neto, Leonie von Terzi, Vera Schemann and Axel Seifert <i>University of Cologne, Germany</i></p>
15:00	15:15	<p>NWP.T5 - Use of dual-polarization signatures in supercell storms for the evaluation of Meso-NH ICE3 and LIMA microphysics schemes <u>Augros Clotilde</u>, Olivier Caumont, Cloé David, Natalia Parisotto Sinhori, Didier Ricard and Benoît Vié <i>CNRM, Université de Toulouse, Météo-France, CNRS, Toulouse, France</i></p>

15:15		15:30	<p>NWP.T6 - An ensemble selection strategy to improve probabilistic precipitation forecasts using LEMA (Localized Ensemble Mosaic Assimilation). <u>Lee Meng-Tze</u>, Man-Kong Yau, Andrés Pérez Hortal, Dominik Jacques and Isztar Zawadzki <i>Mcgill University, Canada</i></p>
15:30		15:45	<p>NWP.T7 - Assimilating Retrieved Water Vapor and Radar Data From NCAR S-PolKa: Performance and Validation Using Real Cases <u>Chung Kao-Shen</u>, Phuong-Nghi Do, Pay-Liam Lin, Ching-Yin Ke and Scott M Ellis <i>Dept. of Atmospheric Sciences, National Central University, Taiwan</i></p>
15:45		16:30	<p>COFFEE BREAK</p>
			<p>QPN - NOWCASTING OF PRECIPITATION Chair: Marc Berenguer</p>
16:30		17:00	<p>QPN.T1 - Advancing nowcasting science and operations with free and open-source software: the pysteps success story <u>Nerini Daniele</u>, Seppo Pulkkinen, Andres A. Perez Hortal, Ruben Imhoff, Lesley De Cruz, Carlos Velasco-Forero, Loris Foresti and Alan Seed <i>Federal Office of Meteorology and Climatology MeteoSwiss, Switzerland</i></p>
	Triplet		<p>QPN.T2 - Extending skillful lead times with a scale-dependent blending of ensemble rainfall nowcasts and NWP in pysteps <u>Imhoff Ruben</u>, Lesley De Cruz, Wout Dewettinck, Carlos Velasco-Forero, Daniele Nerini, Michiel Van Ginderachter, Edouard Goudenhoofd, Claudia Brauer, Klaas-Jan van Heeringen, Remko Uijlenhoet and Albrecht Weerts <i>Deltares, Netherlands</i></p>
			<p>QPN.T3 - Project IMA: Belgium's Seamless Prediction System <u>De Cruz Lesley</u>, Alex Deckmyn, Daan Degrauwe, Idir Dehmous, Laurent Delobbe, Wout Dewettinck, Edouard Goudenhoofd, Ruben Imhoff, Maarten Reyniers, Geert Smet, Piet Termonia, Joris Van den Bergh, Michiel Van Ginderachter and Stéphane Vannitsem <i>Vrije Universiteit Brussel, Belgium</i></p>
17:00		17:15	<p>QPN.T4 - Lagrangian Convolutional Neural Network for Radar-Based Precipitation Nowcasting <u>Ritvanen Jenna</u>, Bent Harnist, Seppo Pulkkinen, Miguel Aldana, Terhi Mäkinen and V. Chandrasekar <i>Finnish Meteorological Institute, Helsinki, Finland</i></p>
17:15		17:30	<p>QPN.T5 - NowPrecip: Localized precipitation nowcasting in the complex topography of Switzerland <u>Sideris Ioannis</u>, Urs Germann, Loris Foresti, Daniele Nerini, Marco Boscacci, Matteo Buzzi and Lorenzo Clementi <i>Federal Office of Meteorology and Climatology MeteoSwiss, Switzerland</i></p>

Monday 29th August 2022

17:30	_____	17:45	QPN.T6 - STEPS as a service - A new generation of operational nowcasting for the Australian continent <u>Curtis Mark</u> , Alan Seed, Carlos Velasco and Jayaram Pudashine <i>Bureau of Meteorology, Australia</i>
17:45	_____	18:00	QPN.T7 - Blending rainfall nowcasting with radar data and high-resolution numerical weather prediction model over Italy <u>Poli Virginia</u> , Renzo Bechini, Chiara Cardinali, Roberto Cremonini and Pier Paolo Alberoni <i>Agenzia regionale per la prevenzione, l'ambiente e l'energia dell' Emilia-Romagna (Arpae), Struttura IdroMeteoClima, Italy</i>
18:00	_____	18:30	QPN.T8 - On the generation of stochastic simulations of rainfall in space and time <u>Seed Alan</u> <i>Griffith University, Australia</i>
18:30	_____	18:45	Weather Forecast
		18:45	ICE BREAKER

Lecture

Tuesday 30th August 2022

HSC - HAIL AND SEVERE CONVECTION

Chair: Rebecca Gugerli

08:30	_____	09:00	Keynote	<p>HSC.T1 - Two Paradigms for Radar-Based Hail-Size Estimation: Problems and Possibilities <u>Kumjian Matthew</u> <i>Department of Meteorology and Atmospheric Science, The Pennsylvania State University, United States</i></p>
9:00	_____	9:30		Triplet
			<p>HSC.T3 - ZDR-column detection and the vertical structure of polarimetric variables in relation to hail probability and size in Switzerland. <u>Martin Aregger</u>, Christoph von Matt, Olivia Martius, Urs Germann and Alessandro Hering <i>Institute of Geography and Oeschger Centre for Climate Change Research, University of Bern, Switzerland</i></p>	
			<p>HSC.T4 - Drone-based hail size estimation within a hail swath of a large supercell in Switzerland <u>Martin Lainer</u>, Killian Brennan, Samuel Monhart, Daniel Wolfensberger, Alessandro Hering and Zaira Schauwecker <i>Federal Office of Meteorology and Climatology MeteoSwiss, Switzerland</i></p>	
9:30	_____	9:45		<p>HSC.T5 - Fine-scale DOW radar observations of hurricane boundary layers <u>Karen Kosiba</u> and Josh Wurman <i>Flexible Array of Radars and Mesonets, University of Illinois, United States</i></p>
9:45	_____	10:00		<p>HSC.T6 - A hail bearing supercell radar analysis in the Mediterranean basin <u>Mario Montopoli</u>, Errico Picciotti, Luca Baldini, Saverio Di Fabio, Frank Silvio Marzano, Marcello Miglietta, Alessandro Tiesi, Simone Mazzà and Gianfranco Vulpiani <i>National Research Council of Italy, Institute of Atmospheric Sciences and Climate (CNR-ISAC), Italy</i></p>
10:00	_____	10:15		<p>HSC.T7 - Australia's new operational hail analysis system: HailCORE <u>Joshua Soderholm</u>, Alain Protat, Valentin Louf, Mark Curtis, Dean Narramore and Darryl Pidcock <i>Bureau of Meteorology, Australia</i></p>
10:15	_____	10:30		<p>HSC.T8 - Polarimetric scattering coefficient library of rough hailstones obtained with a commercial electromagnetic solver <u>Djordje Mirkovic</u> and Dusan Zrnic <i>Cooperative Institute for Severe and High-Impact Weather Research and Operations, United States</i></p>

Tuesday 30th August 2022

10:30 ————— 11:15

COFFEE BREAK

SNO - SNOWFALL

Chair: GyuWon Lee

11:15 ————— 11:30

SNO.T1 - Radar-Based Snowfall Estimate: Which Reflectivity-Snow Water Equivalent Rate Relationship to Use?

Ali Tokay, Charles Helms, David Wolff and Patrick Gatlin
UMBC-NASA/GSFC, United States

11:30 ————— 11:45

SNO.T2 - Polarimetric radar QPE in heavy snow

Petar Bukovcic, Alexander Ryzhkov and Dusan Zrnica
The University of Oklahoma / NOAA, National Severe Storms Laboratory, United States

11:45 ————— 12:00

SNO.T3 - A synergy of polarimetric and dual-frequency radar observations of winter storms for estimating ice water content

Mariko Oue, Alexander Ryzhkov, Sergey Matrosov and Pavlos Kollias
Stony Brook University, United States

12:00 ————— 12:15

SNO.T4 - Cross-validation of microwave snowfall products over the continental United States

Kamil Mroz, Alessandro Battaglia, Mario Montopoli, Giulia Panegrossi, Luca Baldini and Pierre Kirstetter
National Centre for Earth Observation, United Kingdom

12:15 ————— 12:30

SNO.T5 - The Anatomy and Physics of a Snowsquall

Matthew Kumjian, Kelly Lombardo, Karl Schneider, Mariko Oue and Pavlos Kollias
Department of Meteorology and Atmospheric Science, The Pennsylvania State University, United States

12:30 ————— 14:15

LUNCH

HYD - HYDROLOGICAL APPLICATIONS - SALA 1

Chair: Daniel Sempere Torres

14:15 ————— 14:30

HYD.T1 - On the benefit of using radar-based QPE for landslide early warning at regional scale

Marc Berenguer, Daniel Sempere-Torres and Shinju Park
Centre of Applied Research in Hydrometeorology, Universitat Politècnica de Catalunya (CRAHI-UPC), Spain

Tuesday 30th August 2022

- 14:30 ————— 14:45 **HYD.T2 - A flash flood warning system for ungauged basins in the tropical context of La Reunion island**
Pierre Javelle, Didier Organde, Julie Demargne, Philippe Cantet, Maxime Jay-Allemand, Anthony Roulenq, David Villani, Florent Baby and Pierre-André Garambois
INRAE, France
- 14:45 ————— 15:00 **HYD.T3 - Radar nowcasting in Auckland, New Zealand: A catchment focused study**
Luke Sutherland-Stacey, John Nicol, Beatriz Reboredo Viso and Brook Keats
Weather Radar New Zealand
- 15:00 ————— 15:15 **HYD.T4 - Swabian MOSES 2021: A hydro-meteorological measurement campaign**
Jan Handwerker and The Swabian Moses Team Swabian Moses Team
Karlsruhe Institute of Technology, Institute of Meteorology and Climate Research, Germany
- 15:15 ————— 15:30 **HYD.T5 - Accounting for Subbasin Precipitation Variability in Flood Characterization**
Pierre-Emmanuel Kirstetter, Shruti Upadhyaya, Devon Woods, Manabendra Saharia and Jorge Duarte
University of Oklahoma, United States
- 15:30 ————— 15:45 **HYD.T6 - Radar-based ensemble rainfall forecasts to enhance flood forecasts and warnings in Australia**
Carlos Velasco-Forero, Justin Robinson, Jayaram Pudashine and Alan Seed
Bureau of Meteorology, Australia
- ||| **TEC - PHASED-ARREY AND EMERGING TECHNOLOGIES - SALA 2**
Chair: Joshua Wurman
- 14:15 ————— 14:30 **TEC.T1 - Examining the Benefits of a Future Operational Phased Array Radar Network in the United States using Rapid-Scan Radar Observations and Numerical Simulations**
David Bodine, Brandon Cohen, Connor Pearson, Laura Shedd, Mark Yearly, Tian-You Yu, Anthony Reinhart, Jeff Snyder, Sebastian Torres and Howard Bluestein
University of Oklahoma, United States
- 14:30 ————— 14:45 **TEC.T2 - Precipitation observations by multi-parameter phased array weather radar (MP-PAWR)**
Nobuhiro Takahashi and Hiroshi Hanado
ISEE Nagoya University, Japan
- 14:45 ————— 15:00 **TEC.T3 - Development in Progress on C-band Phased Array Weather Radar with Comb Beam Transmission**
Eiichi Yoshikawa, Tomoo Ushio, Hiroshi Kikuchi and Shigeharu Shimamura
Japan Aerospace Exploration Agency, Japan



Tuesday 30th August 2022

15:00	_____	15:15	TEC.T4 - Science Applications of Phased Array Radars <i>Pavlos Kollias, Robert D. Palmer and David J. Bodine</i> <i>Stony Brook University, United States</i>
15:15	_____	15:30	TEC.T5 - Doppler spectra and microphysical retrievals from a G-band radar <i>Ben Courtier, Alessandro Battaglia, Kamil Mroz, Chris Westbrook,</i> <i>Karina McCusker, Peter Huggard, Hui Wang and Chris Walden</i> <i>University of Leicester, United Kingdom</i>
15:30	_____	15:45	TEC.T6 - Observations of Severe Convection with a Passive Multistatic Radar Network <i>Samuel Emmerson, Robert Palmer, David Bodine and Patrick Skinner</i> <i>Advanced Radar Research Center/University of Oklahoma, United States</i>
15:45	_____	16:30	<hr/> COFFEE BREAK <hr/>
16:30	_____	18:45	POSTER (all sessions) & INDUSTRY EXHIBITION (online in gather.town)

Wednesday 31th August 2022

MIC1 - MICROPHYSICS 1

Chair: Dmitri Moisseev

Time	Category	Title	Speaker(s)	Institution
08:30 — 09:00	Lectures	MIC1.T1 - A scaling law for the raindrop size distribution: approaching its 30th Anniversary but still going strong!	<u>Remko Uijlenhoet</u>	<i>Delft University of Technology, Netherlands</i>
9:00 — 9:30	Triplet	MIC1.T2 -Aggregation in Arctic shallow mixed-phase clouds is enhanced by dendritic growth and absent close to the melting level: evidence from long-term remote sensing observations in Ny-Ålesund	<u>Giovanni Chellini</u> , Rosa Gierens, Theresa Kiszler, Vera Schemann and Stefan Kneifel	<i>Institute for Geophysics and Meteorology, University of Cologne, Germany</i>
		MIC1.T3 - Dynamical and microphysical process in the layer around -15°C	<u>Gyuwon Lee</u> and Bo-young Ye	<i>Department of Atmospheric Sciences, Center for Atmospheric REMote sensing (CARE), Kyungpook National University, South Korea</i>
		MIC1.T4 - Novel view on the Dendritic Growth Zone by combining triple-frequency radar and spectral Polarimetry	<u>Leonie von Terzi</u> , Jose Dias-Neto, Alexander Myagkov, Davide Ori and Stefan Kneifel	<i>Institute for Geophysics and Meteorology, University of Cologne, Germany</i>
9:30 — 9:45		MIC1.T5 - Dual-frequency spectral radar retrieval of snowfall microphysics: a deep-learning based approach	<u>Anne-Claire Billault-Roux</u> , Gionata Ghiggi, Louis Jaffaux, Audrey Martini, Nicolas Viltard and Alexis Berne	<i>Environmental Remote Sensing Laboratory, École Polytechnique Fédérale de Lausanne, Switzerland</i>
9:45 — 10:00		MIC1.T6 - Investigating micro-physical processes in Arctic mixed-phase clouds using cloud radar Doppler spectrum skewness	<u>Rosa Gierens</u> , Stefan Kneifel, Matthew Shupe, Kerstin Ebell and Ulrich Löhnert	<i>Institute for Geophysics and Meteorology, University of Cologne, Germany</i>
10:00 — 10:15		MIC1.T7 - Melting of graupel and hail: A vertical wind tunnel study	<u>Miklos Szakall</u> , Alexander Theis, Subir Mitra, Karoline Diehl and Stephan Borrmann	<i>University of Mainz, Institute for Atmospheric Physics, Germany</i>
10:15 — 10:30		MIC1.T8 - New insights on the prevalence of drizzle in marine stratocumulus clouds observed from millimeter-wavelength radar	<u>Zeen Zhu</u> , Pavlos Kollias, Edward Luke, Fan Yang, Katia Lamer and Jason Barr	<i>Brookhaven National Laboratory, United States</i>

10:30 ————— 11:15

COFFEE BREAK

MIC2 - MICROPHYSICS 2 - SALA 1
Chair: Stefan Kneifel

11:15 ————— 11:30

MIC2.T1 - Influence of Kelvin-Helmholtz wave on ice microphysical processes as revealed by polarimetric radars and vertically pointing radars

Kwonil Kim, Chia-Lun Tsai and Gyuwon Lee

*Department of Atmospheric Sciences, Center for Atmospheric REmote sensing (CARE),
Kyungpook National University, South Korea*

11:30 ————— 11:45

MIC2.T2 - Studying differences in snowfall microphysics with surface observations at GPM ground validation sites

Annakaisa von Lerber, Dmitri Moisseev, Claire Pettersen, Mark Kulie, David Hudak and Peter Rodriguez

Finnish Meteorological Institute, Helsinki, Finland

11:45 ————— 12:00

MIC2.T3 - Evaluation of state-of-the-art polarimetry-based ice microphysical retrievals using ground-based radar and in-situ airborne measurements

Armin Blanke, Andrew Heymsfield, Manuel Moser, Christiane Voigt and Silke Trömel

Institute for Geosciences, Department of Meteorology, University of Bonn, Bonn, Germany

12:00 ————— 12:15

MIC2.T4 - CloudBOSS: A Bayesian warm rain microphysics scheme designed for observational constraint and uncertainty quantification

Marcus van Lier-Walqui, Hugh Morrison, Sean Santos and Karly Reimel

Columbia University Center for Climate Systems Research at NASA/GISS, United States

12:15 ————— 12:30

MIC2.T5 - Variability of mesoscale cloud and precipitation structures during near-freezing surface conditions using ground-based radar observations from WINTRE-MIX

Katja Friedrich, Justin Minder, Joshua Wurman, Karen Kosiba, Jeffrey French, David Kingsmill, Andrew Winters, Nicholas Bassill, Julie Thériault and John Gyakum

University of Colorado at Boulder, United States

12:30 ————— 12:45

MIC2.T6 - Simultaneous observation of vertically pointing Ka Band radar and horizontally looking X Band radar in SAIL

Chandra V Chandrasekar and Sounak Biswas

Colorado State University, United States

12:45 ————— 13:00

MIC2.T7 - Investigation of Microphysics and Precipitation for Atlantic Coast-Threatening Snowstorms (IMPACTS): Remote Sensing and microphysics results from recent deployments

Lynn McMurdie, Gerald Heymsfield, John Yorks, Joseph Finlon and Victoria McDonald

Atmospheric Sciences, University of Washington, United States

Wednesday 31th August 2022

**NCT - NOWCASTING OF CONVECTION AND THUNDERSTORMS
- SALA 2**

Chair: Ulrich Blahak

11:15	11:30	NCT.T1 - Lightning-jumps, ZDR-columns and an improved cell severity ranking for automatic thunderstorm warnings in the Alpine area <u>Alessandro Hering</u> , Luca Nisi, Marco Boscacci, Lorenzo Clementi, Luca Panziera and Urs Germann <i>Federal Office of Meteorology and Climatology MeteoSwiss, Switzerland</i>
11:30	11:45	NCT.T2 - SWIRL: the Australian operational 3D wind analysis and nowcasting service and its validation <u>Alain Protat</u> , Valentin Louf, Jordan Brook and Joshua Soderholm <i>Bureau of Meteorology, Australia</i>
11:45	12:00	NCT.T3 - 3D Convective/Stratiform Echo Type Classification and Convectivity from Radar Reflectivity <u>Michael Dixon</u> and Ulrike Romatschke <i>National Center for Atmospheric Research, United States</i>
12:00	12:15	NCT.T4 - Object-based Nowcasting at DWD using KONRAD3D, HYMEC, and Lightning Data <u>Lukas Josipovic</u> , Manuel Werner and Ulrich Blahak <i>Deutscher Wetterdienst (DWD), Germany</i>
12:15	12:30	NCT.T5 - Combination of object-based probabilistic nowcasting and NWP ensemble of convective cells from KONRAD3D <u>Isabel Urbich</u> , Rafael Posada, Gregor Pante and Manuel Werner <i>Deutscher Wetterdienst (DWD), Germany</i>
12:30	12:45	NCT.T6 - Results from a Climatology of Polarimetric Radar Features in Supercells <u>Michael French</u> , Darrel Kingfield, Kristofer S. Tuftedal and Jacob Segall <i>Stony Brook University, United States</i>
12:45	13:00	NCT.T7 - Exploring the polarimetric capabilities of the S-band Mwanza radar in Tanzania, Africa: Towards an Early Warning system in Lake Victoria Basin <u>Anna del Moral</u> , Rita D Roberts, Tammy M Weckwerth and James W Wilson <i>National Center for Atmospheric Research, United States</i>
13:00	14:15	<hr/> LUNCH <hr/>
		SOCIAL EXCURSION
19:00		SOCIAL DINNER Saluto di benvenuto del Consigliere di Stato Manuele Bertoli (welcome address by a member of the local government)

Thursday 1st September 2022

CLI - CLIMATOLOGICAL STUDIES

Chair: Matthew Kumijan

08:30		10:30	POSTER (all sessions) & INDUSTRY EXHIBITION (online in gather.town)	
11:15		11:45	Keynote	
11:45		12:00		CLI.T1 - Trends in Australian hail probability examined using an updated hail proxy and radar data <u>Timothy Raupach</u> , Joshua Soderholm, Rob Warren and Steven Sherwood <i>UNSW Sydney and ARC Centre of Excellence for Climate Extremes, Australia</i>
12:00		12:15		CLI.T2 - Using a catalogue of radar-based heavy rainfall events (CatRaRE) in Germany for assessing the impact of current precipitation events <u>Katharina Lengfeld</u> , Ewelina Walawender, Tanja Winterrath and Elmar Weigl <i>Deutscher Wetterdienst (DWD), Germany</i>
12:15		12:30		CLI.T3 - Extreme rainfall event classification in the tropical Andes by using observations of an X-band radar <u>Gabriela Urgilés</u> , Johanna Orellana-Alvear, Jörg Bendix and Rolando Céleri <i>Departamento de Recursos Hídricos y Ciencias Ambientales, Universidad de Cuenca, Cuenca, Ecuador</i>
12:30		14:15		CLI.T4 - Climatology of the vertical profiles of polarimetric radar variables and retrieved microphysical parameters in continental / tropical MCSs and landfalling hurricanes <u>Jiaxi Hu</u> and Alexander Ryzhkov <i>CIWRO/NSSL, United States</i>
			<hr/>	
12:30		14:15	LUNCH	
			<hr/>	

CAM - HARDWARE, CALIBRATION AND MONITORING - SALA 1

Chair: Jordi Figueras i Ventura

14:15		14:30	CAM.T1 - Reconciling the differences between radar and rain gauges, both are correct, but radar is usually more representative <u>Anthony Illingworth</u> and Robert Thompson <i>University of Reading, United Kingdom</i>
14:30		14:45	CAM.T2 - Short journey into the best practices of monitoring and calibration of the weather radar receiver at MeteoSwiss during the last 25 years <u>Marco Boscacci</u> , Marco Gabella, Lorenzo Clementi, Maurizio Sartori and Urs Germann <i>Federal Office of Meteorology and Climatology MeteoSwiss, Switzerland</i>
14:45		15:00	CAM.T3 - Monitoring of radar reflectivity on nationwide s-band weather radar network using ground clutter, self consistency and intercomparison <u>Jeong-Eun Lee</u> , Soohyun Kwon and Sung-Hwa Jung <i>Weather Radar Center, Korea Meteorological Administration, South Korea</i>

Thursday 1st September 2022

- 15:00 ————— 15:15 **CAM.T4 - Estimation of transmitted differential phase on dual polarization radars**
Dusan Zrnic, Valery Melnikov and David Schwartzman
National Severe Storms Laboratory/NOAA, United States
- 15:15 ————— 15:30 **CAM.T5 - A systematic approach to untangling C-band radar errors utilizing a network of dual frequency vertically profiling radars.**
John Nicol, Luke Sutherland-Stacey and Beatriz Reboledo Viso
Weather Radar New Zealand
- 15:30 ————— 15:45 **CAM.T6 - Calibration of differential reflectivity using dry aggregated snow**
Jiaxi Hu, John Krause and Alexander Ryzhkov
CIWRO/NSSL, United States
- ||| **AIN - ARTIFICIAL INTELLIGENCE - SALA 2**
Chair: Daniele Nerini
- 14:15 ————— 14:30 **AIN.T1 - Using machine learning to improve multi-wavelength spaceborne radar precipitation retrievals**
Stephen Nesbitt, Alfonso Ladino Rincon, Randy Chase, Greg McFarquhar, Robert Rauber and Larry Di Girolamo
University of Illinois Urbana-Champaign, United States
- 14:30 ————— 14:45 **AIN.T2 - Spatial Reflectivity-Based Hail Storm Detection using Deep Learning**
Vincent Forcadell, Clotilde Augros, Kevin Dedieu and Olivier Caumont
CNRM, Université de Toulouse, Météo-France, CNRS, Toulouse, France
- 14:45 ————— 15:00 **AIN.T3 - Improving Nowcasting of Convective Development by Incorporating Polarimetric Radar Variables into a Deep Learning Model**
Xiang Pan, Yinghui Lu, Kun Zhao, Hao Huang, Mingjun Wang and Haonan Chen
Key Laboratory of Mesoscale Severe Weather/MOE and School of Atmospheric Sciences, Nanjing University, Nanjing, China
- 15:00 ————— 15:15 **AIN.T4 - Nowcasting thunderstorm hazards with neural networks from multi-source data**
Jussi Leinonen, Ulrich Hamann and Urs Germann
Federal Office of Meteorology and Climatology MeteSwiss, Switzerland
- 15:15 ————— 15:30 **AIN.T5 - Precipitation nowcasting by the combination of generative and transformer deep learning models**
Gabriele Franch, Virginia Poli, Chiara Cardinali, Marco Cristoforetti and Pier Paolo Alberoni
Fondazione Bruno Kessler, Italy
- 15:30 ————— 15:45 **AIN.T6 - A guide to radar nowcasting using machine learning**
Haonan Chen and V. Chandrasekar
Colorado State University, United States

Thursday 1st September 2022

15:45 ————— 16:30

COFFEE BREAK

POL - POLARIMETRY

Chair: Annakaisa von Lerber

16:30 ————— 16:45

POL.T1 - Refraction of radar beams in precipitation

Valery Melnikov

CIWRO, United States

16:45 ————— 17:00

POL.T2 - An Improved KDP Computation for the Radar Data Quality Assurance of DWD Weather Radars

Tobias Bergmann and Manuel Werner

Deutscher Wetterdienst (DWD), Germany

17:00 ————— 17:15

POL.T3 - Retrieving the Median Volume Diameter of Raindrops with a Polarimetric Cloud Radar

Christine Unal and Yannick van den Brule

Delft University of Technology, Netherlands

17:15 ————— 17:30

POL.T4 - PIA- Φ DP relationship in the melting layer of precipitation observed at X-band

Anil Kumar Khanal, Guy Delrieu, Frédéric Cazenave and Brice Boudevillain

Institute for Geoscience and Environmental Research, France

17:30 ————— 17:45

POL.T5 - Use of dual-pol observations, NWP output and crowd-sourced reports to improve the hydrometeors classification at ground level in Belgium

Sylvain Watelet, Laurent Delobbe and Maarten Reyniers

Royal Meteorological Institute of Belgium

17:45 ————— 18:00

POL.T6 - Multi-wavelength depolarization signatures of snowflakes

Dmitri Moisseev, Maximilian Maahn, Annakaisa von Lerber and Jani Tyynelä

University of Helsinki, Finland

18:00 ————— 18:30

Lecture

POL.T7 - Dual-polarization applications

Alexander Ryzhkov

University of Oklahoma, United States

QPE - ARTIFICIAL INTELLIGENCE - SALA 1

Chair: Hidde Leijnse

- | | | | |
|-------|-------|-------|--|
| 08:30 | _____ | 08:45 | QPE.T1 - Estimation and analysis of extreme rainfall in Belgium during the July 2021 flood event.
<u>Edouard Goudenhoofdt</u> , Laurent Delobbe and Michel Journee
<i>Royal Meteorological Institute of Belgium</i> |
| 08:45 | _____ | 09:00 | QPE.T2 - A radar-based quantitative precipitation estimation algorithm to address near-surface vertical gradients of precipitation in warm-rain processes: the flood in western Germany on 14 July 2021
<u>Ju-Yu Chen</u> , Ricardo Reinoso-Rondinel, Silke Trömel, Clemens Simmer and Alexander Ryzhkov
<i>Institute for Geosciences, Department of Meteorology, University of Bonn, Germany</i> |
| 09:00 | _____ | 09:15 | QPE.T3 - Using a random forest approach to improve the quantitative precipitation estimation from the dual-polarized weather radar network in Switzerland
<u>Rebecca Gugerli</u> , Daniel Wolfensberger, Marco Gabella, Marco Boscacci,
<i>Environmental Remote Sensing Laboratory, École Polytechnique Fédérale de Lausanne, Switzerland</i> |
| 09:15 | _____ | 09:30 | QPE.T4 - Using quality information for merging radar and rain gauge data
<u>Hidde Leijnse</u> and Aart Overeem
<i>Royal Netherlands Meteorological Institute (KNMI), Netherlands</i> |
| 09:30 | _____ | 09:45 | QPE.T5 - Generalized sensitivity analysis of attenuation in precipitation at X-Band frequency using the Mountain Reference Technique
<u>Guy Delrieu</u> , Frederic Cazenave, Anil Kumar Khanal, Brice Boudevillain, Nan Yu and Nicolas Gaussiat
<i>Institute for Geosicnecs and Environmental Reserch, France</i> |
| 09:45 | _____ | 10:00 | QPE.T6 - Added value of multi-year X-band weather radar observations at urban scales
<u>Finn Burgemeister</u> , Marco Clemens and Felix Ament
<i>Meteorological Institute, Center for Earth System Research and Sustainability (CEN), Universität Hamburg, Germany</i> |
| 10:00 | _____ | 10:15 | QPE.T7 - Tropical rainfall monitoring with commercial microwave links in Sri Lanka
<u>Aart Overeem</u> , Bas Walraven, Karlijn Schoenmaker, Hidde Leijnse, Thomas C. van Leth, Linda Bogerd, Jan Priebe, Daniele Tricarico, Arjan Droste and Remko Uijlenhoet
<i>Royal Netherlands Meteorological Institute, Netherlands</i> |

CLU - CLUTTER, INTERFERENCES, INSECTS AND THE LIKE - SALA 2
Chair: Daniel Michelson

08:30	08:45	<p>CLU.T1 - Analysis of insect concentrations using weather radars: Weather radar echoes classification <u>Samuel Kwakye</u>, Johannes Quaas and Heike Kalesse-Los <i>Universität Leipzig, Germany</i></p>
08:45	09:00	<p>CLU.T2 - SEMAFOR project: remote sensing of avifauna using the French meteorological radar network <u>Thibault Désert</u>, Jordi Figueras i Ventura, Baptiste Schmid, Vincent Delcourt, Camille Assali, Nicolas Gaussiat and Cécile Bon <i>Météo-France, France</i></p>
09:00	09:15	<p>CLU.T3 - Mobile Radar Observations in Wildfires <u>Joshua Wurman</u> and Karen Kosiba <i>Flexible Array of Radars and Mesonets, University of Illinois, United States</i></p>
09:15	09:30	<p>CLU.T4 - Polarimetric signatures of wildfire smoke plumes from the 2019/2020 Black Summer in Australia <u>Adrien Guyot</u>, Hamish McGowan, Joshua Soderholm and Alain Protat <i>Bureau of Meteorology, Australia</i></p>
09:30	09:45	<p>CLU.T5 - Regression Ground Clutter Filtering to Improve Radar Signal Statistics: Application to Experimental Data <u>John Hubbert</u>, Ulrike Romatschke, G. Meymaris and Mike Dixon <i>NCAR, United States</i></p>
09:45	10:00	<p>QPE.T6 - Assessing and mitigating the radar - radar interference in the German C-band weather radar network <u>Michael Frech</u>, Cornelius Hald, Bertram Lange and Benjamin Rohrdantz <i>Deutscher Wetterdienst (DWD), Germany</i></p>
10:00	10:15	<p>QPE.T7 - RFI in X-band weather radars: a procedure to identify interfering sources during in field measurements <u>Mattia Vaccarone</u>, V. Chandrasekar, Renzo Bechini, Roberto Cremonini, Davide Di Marzio, Francesco Spadafora and Andrew Benn <i>Colorado State University - Arpa Piemonte, Dipartimento Rischi Fisici e Tecnologici</i></p>

10:15 ————— **11:00**

COFFEE BREAK

FAS - FREQUENCY-DIVERSITY, AIRBORNE AND SPACEBORNE
Chair: Steven Nesbitt

11:00 ————— 11:30

Lecture

FAS.T1 - Radar measurements of wind and rainfall from space
Anthony Illingworth
University of Illinois Urbana-Champaign, United States

Friday 2nd September 2022

11:30	_____	11:45	FAS.T2 - Doppler velocity measurements from space <u>Katia Lamer</u> , Pavlos Kollias, Alessandro Battaglia, Bernat P. Treserras and Scott A. Braun <i>Brookhaven National Laboratory, United States</i>
11:45	_____	12:00	FAS.T3 - Vertical Velocity Derived from Airborne Doppler Radar Measurements During IMPACTS <u>Gerald Heymsfield</u> , Matthew McLinden, Peter Pantina, Charles Helms and Lihua Li <i>NASA Goddard Space Flight Center, United States</i>
12:00	_____	12:15	FAS.T4 - Deepening our understanding of (shallow) precipitation observations retrieved by conical-scanning radiometers <u>Linda Bogerd</u> , Hidde Leijnse, Aart Overeem and Remko Uijlenhoet <i>Wageningen University & Research, Netherlands</i>
12:15	_____	12:30	FAS.T5 - Validation of the spaceborne radar module within the RTTOV-SCATT radiative transfer model <u>Mary Borderies</u> , Rohit Mangla, Philippe Chambon and Alan Geer <i>CNRM, Université de Toulouse, Météo-France & CNRS, Toulouse, France</i>
12:30	_____	12:45	FAS.T6 - Highly supercooled riming and unusual triple-frequency radar signatures over Antarctica <u>Frederic Tridon</u> , Israel Silber, Alessandro Battaglia, Stefan Kneifel, Ann Fridlind, Petros Kalogeras and Ranvir Dhillon <i>Politecnico di Torino, Italy</i>
12:45	_____	13:00	FAS.T7 - Impact of second-trip echoes for space-borne high-pulse-repetition-frequency nadir-looking W-band cloud radars <u>Alessandro Battaglia</u> <i>Politecnico di Torino, Italy</i>
13:00	_____	13:30	CLOSURE
13:15	_____	14:15	<hr/> LUNCH <hr/>

**AIN
ARTIFICIAL INTELLIGENCE**

AIN.P1 - Quantitative Precipitation Estimation using Weather Radar and Rain Gauge Data Fusion with Machine Learning

Cesar Beneti, Fernanda Verdelho, Leonardo Calvetti, Roberto Calheiros, Marco Antonio Zanata Alves and Luiz Eduardo Soares de Oliveira
SIMEPAR - Parana Technology and Environmental Monitoring System, Brazil

AIN.P2 - Melting layer monitoring with a micro rain radar using a neural network

Finn Burgemeister, Piet Markmann and Gerhard Peters
Meteorological Institute, Center for Earth System Research and Sustainability (CEN), Universität Hamburg, Germany

AIN.P3 - Radar-rain gauge Cumulated Quantitative Precipitation Estimation with deep convolutional neural network

Chiara Cardinali, Gabriele Franch, Virginia Poli, Marco Cristoforetti and Pier Paolo Alberoni
Arpa Emilia-Romagna, Struttura IdroMeteoClima, Italy

AIN.P4 - Precipitation Nowcasting by Deep Physics-Constrained Neural Networks

Matej Choma, Jakub Bartel and Petr Šimánek
Arpa Emilia-Romagna, Struttura IdroMeteoClima, Italy

AIN.P5 - Application of CNN to improve deterministic optical flow nowcasting at DWD

Ulrich Friedrich
Deutscher Wetterdienst (DWD), Germany

AIN.P6 - Precipitation nowcasting with autoregressive deep learning models

Yann Yasser Haddad, Gionata Ghiggi, Monika Feldmann, Pierre Vandergheynst and Alexis Berne
Environmental Remote Sensing Laboratory, École Polytechnique Fédérale de Lausanne, Switzerland

AIN.P7 - A neural network to detect wind turbine contamination using I/Q data

Nawal Husnoo, Tim Darlington, Sebastian Torres and David Warde
Met Office, United Kingdom

AIN.P8 - Weather Radar Velocity Unfolding Using Convolutional Neural Networks

Hyeri Kim, Tian-You Yu and Boonleng Cheong
Advanced Radar Research Center, University of Oklahoma, United States

AIN.P9 - Polarimetric retrieval of raindrop size distribution parameters using machine learning

Gyuwon Lee, Kyuhee Shin, Joon Jin Song, Kwonil Kim and Wonbae Bang
Department of Atmospheric Sciences, Center for Atmospheric REmote sensing (CARE), Kyungpook National University, South Korea

Poster sessions

AIN.P10 - Top-Down hierarchical clustering of polarised x-band doppler radar observations for hydrometeor and aerocological classification

Maryna Lukach, Ryan R. Neely III, Thomas Dally, Jonathan Crosier, David Dufton, Freya Addison, Lindsay Bennett, Christopher Hassall, William Evans, Elizabeth Duncan, William E. Kunin and Jason W Chapman
National Centre for Atmospheric Science and the School of Earth and Environment, University of Leeds, United Kingdom

AIN.P11 - Machine learning for prediction of convective hazards and impacts - the TAMIR project

Seppo Pulkkinen, Tero Niemi, Heikki Myllykoski, Annakaisa von Lerber, Miikka Leinonen and Tiia Renlund
Finnish Meteorological Institute, Helsinki, Finland

AIN.P12 - Estimation of specific differential phase with a convolutional autoencoder

Robert Schrom
NASA GSFC/ORAU, United States

AIN.P13 - Nowcasting of severe thunderstorms with ensemble deep learning on CAPPI images over Ligurian area in Northern Italy

Marco Tizzi, Sabrina Guastavino, Michele Piana, Federico Cassola, Antonio Iengo, Enrico Solazzo, Davide Sacchetti and Federico Benvenuto
Agenzia Regionale per la Protezione dell'Ambiente Ligure - ARPAL, Italy

CLI CLIMATOLOGICAL STUDIES

CLI.P1 - Documentation of heavy rain events with an event data base

Alrun Jasper-Tönnies, Philipp Bühler, Thomas Einfalt, Katharina Lengfeld and Markus Jessen
hydro & meteo GmbH, Germany

CLI.P2 - Spatial analysis of the variability in the short-term rainfall time structure

Marek Kašpar, Vojtěch Bližňák, Filip Hulec and Miloslav Müller
Institute of Atmospheric Physics CAS, Czechia

CLI.P3 - A 20 years climatology of storm tracks by joint analysis of Vertical Maximum Intensities, lightning and hailpads over north-eastern Italy

Arturo Pucillo
ARPA FVG - OSMER, Italy

CLI.P4 - Classification of parent convective systems of tornadoes by using radar reflectivity

Koji Sassa and Kotarou Fujii
Kochi University, Japan

CLI.P5 - Changing patterns of heavy rainfall events across an urban area (Milan, Italy)

Herminia Torelló, Francesco Marra and Nadav Peleg
Institute of Earth Surface Dynamics, University of Lausanne, Switzerland

Poster sessions

CLI.P6 - A first insight into the hail distribution over Germany

Tabea Wilke, Katharina Lengfeld, Markus Schultze and Joshua Soderholm
Deutscher Wetterdienst (DWD), Germany

CLU CLUTTER, INTERFERENCES, INSECTS AND THE LIKE

CLU.P1 - Withdrawn

CLU.P2 - An Algorithm for Suppressing Radio Frequency Interference in Weather Radars

Roberto Costantini
INVAP S. E., Argentina

CLU.P3 - Use of doppler radar to monitoring products from Popocatépetl volcano to Mexico City

Hugo Delgado Granados, Eric B. Tellez, Agustín García, Gerardo Galguera and Adolfo Magaldi
Instituto de Geofísica, UNAM, Mexico

CLU.P4 - A concept for potential cohabitation of wind turbines and radar

Thomas Einfalt, Markus Jessen and Inga Frerk
hydro & meteo GmbH, Germany

CLU.P5 - The influence of wind turbines on weather radar data in Germany

Pascal Graf and Willi Schmid
Meteotest AG, Switzerland

CLU.P6 - A New Bandstop Regression Filter with Application to SZ Phase Coding

John Hubbert
NCAR, United States

CLU.P7 - Studying the presence of insects using cloud radar and video in-situ observations

Heike Kalesse-Los, Maximilian Maahn, Richard Engelhardt and Dmitri Moisseev
Leipzig Institute for Meteorology, University of Leipzig, Germany

CLU.P8 - High temporal resolved x-band weather radar returns from a windmill scatterer

Martin Lainer, Jordi Figueras i Ventura, Zaira Schauwecker, Marco Gabella and Jacopo Grazioli
Federal Office of Meteorology and Climatology MeteoSwiss, Switzerland

CLU.P9 - Anomaly Detection and Removal at the FMI

Markus Peura
Finnish Meteorological Institute, Helsinki, Finland

CLU.P10 - Performance analysis of the Argentinian Meteorological Radar Radio Frequency Interference filter

Federico Renolfi, Daniel Vela Diaz and Roberto Costantini
INVAP, Argentina



Poster sessions

CLU.P11 - On the interference of weather radar data by wind turbines: evaluation of the restored meteorological information

Tanja Sauter, Kathleen Helmert, Patrick Tracksdorf, Michael Frech, Uwe Köster, Ulrike Blank and Gerd Teschke

Deutscher Wetterdienst (DWD), Germany

CLU.P12 - The DWD RF-interference mitigation

Maximilian Schaper, Michael Frech and David Michaelis

Deutscher Wetterdienst (DWD), Germany

CLU.P13 - Wind Turbine Clutter Detection in real-time Weather Radar Signals – Developments for the DWD C-Band Weather Radar Network

Matthias Toussaint, Simon Gerhards, Patrick Tracksdorf and Johannes Vieten

GAMIC GmbH, Germany

CLU.P14 - Advanced Signal Processing for Weather Radars

Matthias Toussaint, and Johannes Vieten

GAMIC GmbH, Germany

CLU.P15 - Analysis Of Spectral And Polarimetric Observations Recorded By A X-Band Weather Radar From A Wind Turbine Scatterer

Daniel Wolfensberger, Marco Gabella, Martin Lainer, Jacopo Grazioli,

Jordi Figueras i Ventura and Urs Germann

Federal Office of Meteorology and Climatology MeteoSwiss, Switzerland

FAS FREQUENCY-DIVERSITY, AIRBORNE AND SPACEBORNE

FAS.P1 - Evaluation of GPM DPR products through a country-wide network of disdrometers over Italy

Elisa Adirosi, Federico Porcù, Mario Montopoli, Luca Baldini, Alessandro Bracci, Vincenzo Capozzi, Clizia Annella, Giorgio Budillon, Edoardo Bucchignani, Alessandra Lucia Zollo, Orietta Cazzuli, Giulio Camisani, Renzo Bechini, Roberto Cremonini, Andrea Antonini, Alberto Ortolani, Samantha Melani, Paolo Valisa and Simone Scapin

National Research Council of Italy, Institute of Atmospheric Sciences and Climate (CNR-ISAC), Italy

FAS.P2 - The Potential of the W-band polarization diversity Doppler radar envisaged for the WIVERN mission for sampling tropical cyclones

Alessandro Battaglia, Frederic Tridon, Paolo Martire and Anthony Illingworth

Politecnico di Torino, Italy

FAS.P3 - GPM DPR Hydrometeor Classification Module

V Chandrasekar and Minda Le

Colorado State University, United States

FAS.P4 - A new Dual-Frequency-based Hydrometeor Classification Approach for the Global Precipitation Measurements Core-Satellite

Velibor Pejčic, Kai Mühlbauer and Silke Trömel

Institute for Geosciences, Department of Meteorology, University of Bonn, Germany



Poster sessions

FAS.P5 - Scientific products derived from airborne W-band radar observations

Ulrike Romatschke, Mike Dixon and Jothiram Vivekanandan
National Center for Atmospheric Research, United States

FAS.P6 - Calibration of space-borne conically scanning radars

Filippo Emilio Scarsi, Alessandro Battaglia and Kamil Mroz
Politecnico di Torino, Italy

FAS.P7 - GRaWAC: G-band Radar for Water vapor profiling and Arctic Clouds

Sabrina Schnitt, Mario Mech, Thomas Rose, Vera Schemann and Susanne Crewell
University of Cologne, Germany

HSC HAIL AND SEVERE CONVECTION

HSC.P1 - Off-shore and in-land hail detection through radar and satellite

Andrea Antonini, Sante Laviola, Samantha Melani, Aldo Sonnini, Giulio Monte, Alberto Ortolani and Vincenzo Levizzani
LaMMA Consortium, Italy

HSC.P2 - Automatic Hail reporting in METAR messages for aircraft safety

Martin Aregger, Loris Foresti, Jordi Figueras i Ventura and Alessandro Hering
*Institute of Geography and Oeschger Centre for Climate Change Research,
University of Bern, Switzerland*

HSC.P3 - Preliminary results from the PRECIP 2022 field campaign

Michael Bell and Kristen Rasmussen
Colorado State University, United States

HSC.P4 - Rapid-scan, polarimetric Doppler-radar observations of the life cycle of an anticyclonic tornado in a cyclonically-rotating supercell

Howard Bluestein, Jake Margraf, Samuel Emmerson, Trey Greenwood, David Bodine, Boonleng Cheong and Tian You Yu
School of Meteorology/University of Oklahoma, United States

HSC.P5 - Observation System Simulation Experiments for Microburst Demonstration Test using WISSDOM-AiR

Youn Choi, Kwang-Ho Kim, Sung-Hwa Jung, Yu-Chieng Liou and Yung-Lin Teng
Weather Radar Center, Korea Meteorological Administration, South Korea

HSC.P6 - Exploring Tornado Debris Signature Hypotheses Using Radar Simulations and Large-Eddy Simulations

Rachael Cross, David Bodine, Robert Palmer, Casey Griffin, Boonleng Cheong, Sebastian Torres, Caleb Fulton, Javier Lujan and Takashi Maruyama
University of Oklahoma School of Meteorology, United States

HSC.P7 - Forecasting the weather to assist ATC and ATM operations

Laura Esbri, Tomeu Rigo, Maria Carmen Llasat, Riccardo Biondi, Rosa Claudia Torcasio, Stefano Federico, Olga Gluchshenko, Markus Kerschbaum, Martina Lagasio, Vincenzo Mazzarella, Marco-Michael Temme, Massimo Milelli, Eugenio Realini and Antonio Parodi
Department of Applied Physics, University of Barcelona, Spain

Poster sessions

HSC.P8 - T- and M-DATING – detection and tracking of thunderstorms and mesocyclones

Monika Feldmann, Marco Gabella and Alexis Berne

Environmental Remote Sensing Laboratory, École Polytechnique Fédérale de Lausanne, Switzerland

HSC.P9 - Relationships between changes in tornado wind field and tornadic debris signature structure with variations in terrain and land cover

Jana Houser, Howard Bluestein, Zachary Wienhoff and Kyle Thiem

Ohio University, United States

HSC.P10 - Dual-wavelength polarimetric analysis of a severe hailstorm in Vienna, Austria

Vinzent Klaus, Rudolf Kaltenböck and Harald Rieder

University of Natural Resources and Life Sciences, Vienna, Austria

HSC.P11 - The summer 2021 Switzerland hailstorms: new climatological extremes

Jérôme Kopp, Katharina Schröer, Olivia Martius, Cornelia Schwierz, Urs Germann and Alessandro Hering

Institute of Geography and Oeschger Centre for Climate Change Research, University of Bern, Switzerland

HSC.P12 - Radar deployments in The PERiLS (Propagation, Evolution and Rotation in Linear Storms) Southeastern Tornado Study

Karen Kosiba, Josh Wurman, Jeff Trapp, Steve Nesbitt and Matt Parker

Flexible Array of Radars and Mesonets, University of Illinois, United States

HSC.P13 - An arguable influence of terrain on intensity of supercells based on two-dimensional radar reflectivity data

Robert Kvak, Ľuboslav Okon, Ladislav Méri, Vojtěch Bližňák and Marek Kašpar

Charles University in Prague, Faculty of Science, Department of Physical Geography and Geoecology, Czechia

HSC.P14 - A novel multi-sensor technique for the optimal detection of hailstorms

Sante Laviola, Anna Fornasiero, Miria Celano, Federico Vermi, Giulio Monte, Pier Paolo Alberoni and Vincenzo Levizzani

CNR-ISAC, Italy

HSC.P15 - Citizen weather reports at RMIB and their use for radar-based hail detection verification

Maarten Reyniers, Laurent Delobbe and Sylvain Watelet

Royal Meteorological Institute of Belgium

HSC.P16 - Space-time variation of large hail-producing mesoscale convective systems over a complex terrain of the Indian subcontinent as revealed by the integrated TRMM and GPM observations

Partha Roy, T. Narayana Rao and Sanjay Sharma

National Atmospheric Research Laboratory, Department of Space, Govt. of India

Poster sessions

HSC.P17 - Radar characteristics of derecho producing mesoscale convective systems in the Czech Republic

David Rýva

Czech Hydrometeorological Institute, Czechia

HSC.P18 - Severe convective storms analysed by combined measurements of Ka-band cloud profiler and X-band weather radar

Zbyněk Sokol and Jana Popová

Institute of Atmospheric Physics of the Czech Academy of Sciences, Czechia

CAM HARDWARE, CALIBRATION AND MONITORING

CAM.P1 - The interaction of data quality monitoring and operational surveillance of weather radar networks

Hassan Al Sakka and André Weipert

Leonardo Germany GmbH, Germany

CAM.P2 - Quantifying the pedestal levelling error with the solar monitoring method

Patricia Altube Vázquez and Ferran Fabró Tapia

Servei Meteorològic de Catalunya, Spain

CAM.P3 - Estimating wet antenna losses with help of solar scans made at all weather conditions with a Ka-band cloud radar

Matthias Bauer-Pfundstein

Metek GmbH, Germany

CAM.P4 - Monitoring the Quality of Quality-controlled Radar Moments

Annette Boehm, Manuel Werner and Michael Frech

Deutscher Wetterdienst (DWD), Germany

CAM.P5 - Monitoring Bright Ground Clutter Targets in the Canadian Weather Radar Network

Norman Donaldson and Daniel Michelson

Environment and Climate Change Canada

CAM.P6 - Linear and circular polarization using phase shifter at the DWD Hohenpeißenberg research radar

Michael Frech, Cornelius Hald and Mathias Gergely

Deutscher Wetterdienst (DWD), Germany

CAM.P7 - Experiences of one-month synchronous measurements with two different cloud radars

Jan Handwerker and Thomas Renkhoff

Karlsruhe Institute of Technology, Institute of Meteorology and Climate Research, Germany

CAM.P8 - Comparison of Solid state vs Magnetron C-band Weather radar

Jan Hrach and Michal Najman

Meteopress, Czechia

Poster sessions

CAM.P9 - Comparison of Radar Reflectivity from Disdrometers and Weather Radars of Hungarian Measuring Network

Imre Kálmán, Marianna Hadvári and Péter Németh
Hungarian Meteorological Service, Hungary

CAM.P10 - Quality approval for mobile X-band radar measurements

Melissa Latt and Jan Handwerker
Karlsruhe Institute of Technology, Germany

CAM.P11 - Study of historical “monitoring signals” to support maintenance

Mercedes Maruri, Aurelio Diaz de Arcaya, Jose Antonio Aranda
and Santiago Gaztelumendi
Tecnalia - Meteo & Climate Area / University of the Basque Country UPV/EHU, Spain

CAM.P12 - Monitoring of radar data quality in the Czech Weather Radar Network

Petr Novák and Hana Kyznarová
Czech Hydrometeorological Institute, Czechia

CAM.P13 - Development of integrated radar monitoring system for easy viewing of radar system condition

Jin-woo Park, Ji-Young Gu, Sun-Jin Mo and Seungwoo Lee
*Weather Radar Center, Korea Meteorological Administration, Seoul,
Republic of Korea, South Korea*

CAM.P14 - Calibration of the radar differential reflectivity using quasi-vertical profiles

Daniel Sanchez-Rivas and Miguel Angel Rico-Ramirez
*Weather Radar Center, Korea Meteorological Administration, Seoul,
University of Bristol, United Kingdom*

CAM.P15 - Advanced Target Generation Applications: From Point Targets to Complex Time-Varying Doppler-RCS Patterns

Marc Schneebeli and Andreas Leuenberger
Palindrome Remote Sensing, Switzerland

CAM.P16 - Testing the “dry snow” technique to calibrate ZDR observations of supercells from disparate X-band radars

Robin Tanamachi
PalinPurdue University, United States

HYD HYDROLOGICAL APPLICATIONS

HYD.P1 - BRAIN and Its Hydrological Application

Hideyuki Kamimera
National Research Institute for Earth Science and Disaster Resilience, Japan

HYD.P2 - Towards nationwide post-processing of ensemble nowcasts to support flood warnings in small catchments

Jan Bondy, Christian Berndt, Markus Schultze and Ulrich Blahak
Deutscher Wetterdienst (DWD), Germany

Poster sessions

HYD.P3 - Synergistic precipitation observations in an urban environment

Finn Burgemeister, David Hafezi Racht, Marco Clemens and Felix Ament
*Meteorological Institute, Center for Earth System Research and Sustainability (CEN),
Universität Hamburg, Germany*

HYD.P4 - Modelling soil erosion under extreme rainfall using a radar-runoff-nowcasting-system

Rossano Ciampalini, Ascanio Rosi, Samuele Segoni, Andrea Antonini, Alberto Ortolani, Francesca Caparrini and Sandro Moretti
Department of Earth Sciences, University of Florence, Florence, Italy

HYD.P5 - Increasing the resilience of Greater Paris to space-time variability of heavy rainfalls: a cloud-based platform for the ENPC X-band radar

Guillaume Drouen, Ioulia Tchiguirinskaia and Daniel Schertzer
Ecole des Ponts ParisTech, Hydrology Meteorology & Complexity (HM&Co), France

HYD.P6 - Improving radar rainfall estimation for flood risk using Monte Carlo ensemble simulation

Amy Green
Newcastle University, United Kingdom

HYD.P7 - Polarimetric signature of extreme rain events in high spatial resolution radar data in Switzerland

Adrien Liernur, Marco Gabella, Urs Germann, Frédéric Jordan, Raphaël Mutzner and Alexis Berne
Environmental Remote Sensing Laboratory, École Polytechnique Fédérale de Lausanne, Switzerland

HYD.P8 - Hydrometeorological analysis and forecasting of a 3d flash-flood-triggering desert rainstorm

Efrat Morin, Yair Rinat, Francesco Marra, Moshe Armon, Asher Metzger, Yoav Levi, Pavel Khain, Elyakom Vadislavsky and Marcelo Rosensaft
Hebrew University of Jerusalem, Israel

HYD.P9 - Seamless prediction using radar data, nowcasting and numerical weather prediction models, to enhance hydrological operational forecasting

Maria Laura Poletti, Francesco Silvestro, Martina Lagasio, Flavio Pignone and Antonio Parodi
CIMA Research Foundation, Italy

MIC1 MICROPHYSICS

MIC1.P1 - Evaluation of vertical variability of precipitation through Micro Rain Radar measurements in Rome

Elisa Adirosi, Luca Baldini and Ali Tokay
National Research Council of Italy, Institute of Atmospheric Sciences and Climate (CNR-ISAC), Italy

Poster sessions

MIC1.P2 - Improving Radar-Based Precipitation Type Classifications at the UK Met Office

Steven Best

Met Office, United Kingdom

MIC1.P3 - On comparing 94 GHz satellite measurements with a Micro Rain Radar and disdrometer observations in an Antarctic site

Alessandro Bracci, Kaori Sato, Luca Baldini, Federico Porcù and Hajime Okamoto
National Research Council of Italy, Institute of Atmospheric Sciences and Climate (CNR-ISAC), 00133 Rome, Italy

MIC1.P4 - Clouds blowing in the wind: momentum transport in cloudy boundary layers observed from collocated wind lidar and cloud radars and simulated with DALES

José Dias Neto, Louise Nuijens, Natalie Theeuwes, Fredrik Jansson and Pier Siebesma

Delft University of Technology, Netherlands

MIC1.P5 - Comparison of windprofiler and a micro-rain radar precipitation observations

Albert Garcia-Benadí, Joan Bech, Mireia Udina, Bernard Campistron and Alexandre Paci

Department of Applied Physics - Meteorology, University of Barcelona, Spain

MIC1.P6 - Sensitivity analysis of μ - Λ relationship in stratiform rain

Christos Gatidis, Marc Schleiss and Christine Unal

Department of Geoscience and Remote Sensing, Delft University of Technology, Netherlands

MIC1.P7 - DISDRODB: a global data base of raindrop size distribution observations

Gionata Ghiggi, Kim Candolfi, Saverio Guzzo, Christine Unal, Marc Schleiss, Remko Uijlenhoet, Tim Raupach and Alexis Berne

Environmental Remote Sensing Laboratory, École Polytechnique Fédérale de Lausanne, Switzerland

MIC1.P8 - Where are rainfall drops measured by a radar falling in a multifractal turbulent wind field?

Auguste Gires, Ioulia Tchiguirinskaia and Daniel Schertzer

Hydrologie Météorologie et Complexité (HM&Co), École des Ponts ParisTech, France

MIC1.P9 - Evaluation of melting layers detected via DWD's C-Band radar and MRR

Cornelius Hald, Annette Böhm and Michael Frech

Deutscher Wetterdienst (DWD), Germany

MIC1.P10 - Characteristics of Raindrop Size Distribution observed in Southern China in different weather scenarios using 2-D video disdrometer

Jeffery Jin and Ying Wa Chan

Hong Kong Observatory



Poster sessions

MIC1.P11 - Deriving the Full 4-pi Steradian Single Scattering Properties from Quadrature Nodes for Complex Hydrometeors

Kwo-Sen Kuo and Ines Fenni

University of Maryland, United States

MIC1.P12 - Analysis of Dynamic and Microphysical Characteristics of Different Precipitation Types Derived from Volumetric Dual-Polarimetric Radar Observations

Gyuwon Lee, Choeng-Lyong Lee, Wonbae Bang and Chia-Lun Tsai

Department of Astronomy and Atmospheric Sciences, Kyungpook National University, Daegu, Korea, South Korea

MIC1.P13 - Performance improvement of Spectral Bin Model through optimization of microphysics scheme in Pyeongchang region

Gyuwon Lee, Wonbae Bang, Jacob Carlin, Kwonil Kim, Alexander Ryzhkov and Guosheng Liu

Department of Atmospheric Sciences, Center for Atmospheric REmote sensing (CARE), Kyungpook National University, South Korea

MIC1.P14 - Supercooled liquid water and secondary ice production in Kelvin–Helmholtz instability as revealed by radar Doppler spectra observations

Haoran Li, Alexei Korolev and Dmitri Moisseev

Chinese Academy of Meteorological Sciences, China

MIC1.P15 - Microphysical features of typhoon and non-typhoon rainfall observed in Taiwan, an island in the northwestern Pacific

Pay-Liam Lin, Jayalakshmi Janapati, Balaji Kumar Seela, Meng-Tze Lee and Everette Joseph

Department of Atmospheric Sciences, Institute of Atmospheric Physics, National Central University, Taiwan

MIC2 MICROPHYSICS

MIC2.P1 - Raindrop Size Distributions of North Indian Ocean Tropical Cyclones Observed at the Coastal and Inland Stations in South India

Pay-Liam Lin, Balaji Kumar Seela, Jayalakshmi Janapati, Chirikandath Kalath Unnikrishnan, Jui Le Loh, Wei-Yu Chang, Utpal Kumar, K. Krishna Reddy, Dong-In Lee and Mannem Venkatrami Reddy

Institute of Earth Sciences, Academia Sinica, Taipei 11529, Taiwan

MIC2.P2 - Rain Drop Size Distribution and Microphysics Characteristics of Precipitation in Different Seasons in Taiwan

Pay-Liam Lin

National Central University, Taiwan

MIC2.P3 - The Dynamics and Microphysics of High-Latitude Clouds during the COMBLE Field Experiment

Zackary Mages, Pavlos Kollias, Zeen Zhu and Edward Luke

Stony Brook University, United States

Poster sessions

MIC2.P4 - A PICASSO case-study: Can we reproduce accurate observations using in-situ measured PSDs and scattering from particle models in the ARTS database?

[Karina McCusker](#), Chris Westbrook, Chris J. Walden, Jonathan Crosier, Sebastian O'Shea and Richard Cotton
University of Reading, United Kingdom

MIC2.P5 - The link between rain and ice microphysics across the melting layer

[Kamil Mroz](#), Alessandro Battaglia, Stefan Kneifel, Leonie von Terzi, Davide Ori and Markus Karrer
National Centre for Earth Observation, United Kingdom

MIC2.P6 - Mixed-phase cloud characteristics over a tropical site using cloud radar

[Meenu R Nair](#), Madhu Chandra R Kalapureddy and Sukhanya Patra
Indian Institute of Tropical Meteorology, India

MIC2.P7 - Towards a database of scattering properties of ensemble rather than individual ice and snow particles

[Davide Ori](#), Markus Karrer, Leonie von Terzi and Stefan Kneifel
University of Cologne, Germany

MIC2.P8 - Utility of ground based cloud radar to observe turbulence on cloud droplets to raindrop transition

[Sukanya Patra](#), Madhu Chandra Kalapureddy and Meenu R Nair
Indian Institute of Tropical Metrology, India

MIC2.P9 - Cloud radar perspective on tropical cumulus congests cloud and its role on the rainfall

[Sukanya Patra](#), Madhu Chandra Kalapureddy and Meenu R Nair
Indian Institute of Tropical Metrology, India

MIC2.P10 - Microphysical Processes in Embedded Convective Cells in Landfalling Tropical Cyclone NIVAR using X-band dual polarization radar

[Abhijeet Kumar](#), T Narayana Rao, Rama Rao Nidamanuri and Basivi Radhakrishna
National Atmospheric Research Laboratory, Gadanki, India, India

MIC2.P11 - Precipitation type analysis using a hydrometeor classification of high-resolution radar data – details on the algorithm developed and used at Deutscher Wetterdienst

[Markus Schultze](#), Jörg Steinert and Tim Böhme
Deutscher Wetterdienst (DWD), Germany

MIC2.P12 - X-band radar technology and new multifractal drop size distribution model

[Ioulia Tchiguirinskaia](#) and Daniel Schertzer
Ecole des Ponts ParisTech, Hydrology Meteorology & Complexity (HM&Co), France



Poster sessions

MIC2.P13 - Retrieval of ice microphysics using polarimetric and dual-wavelength radar observations – a sensitivity study

Eleni Tetoni, Florian Ewald, Martin Hagen, Gregor Köcher, Tobias Zinner, Christoph Knotz, Bernhard Mayer and Silke Groß
German Aerospace Center (DLR), Germany

MIC2.P14 - Analysis of charge structure in a typical deep convection using C-band polarimetric radar and LF-band three-dimensional lightning mapper

Akihito Umehara, Satoru Yoshida, Syugo Hayashi, Nobuhiro Nagumo, Hiroshi Yamauchi and Eiichi Yoshikawa
Meteorological Research Institute, Japan

MIC2.P15 - Tracking isolated thunderstorms in Houston TX with polarimetric radar and the lightning mapping array

Marcus van Lier-Walqui, Kelcy Brunner, Eric Bruning, Toshi Matsui, Takamichi Iguchi, Daniel Hernandez-Deckers and Ann Fridlind
Columbia University Center for Climate Systems Research at NASA/GISS, United States

MIC2.P16 - Fall velocity of melting snow particles examined in ensembles

Annakaisa von Lerber and Dmitri Moisseev
Finnish Meteorological Institute, Helsinki, Finland

NCT NOWCASTING OF CONVECTION AND THUNDERSTORMS

NCT.P1 - Automatic reporting of convection in METAR messages for aircraft safety

Simone Balmelli, Loris Foresti, Mervyn Bibby, Pieter du Preez, Néstor Tarin Burriel and Urs Germann
Federal Office of Meteorology and Climatology MeteoSwiss, Switzerland

NCT.P2 - Thunderstorms characterization improvements combining NWCSAF-RDT estimated parameters with measurements from weather radar

Valentina Campana, Miria Celano, Roberto Cremonini, Pier Paolo Alberoni, Silvia Puca and Pietro Giordano
ARPA Piemonte, Italy

NCT.P3 - Meteorological Algorithm Requirements for Disaster Early Warning and Decision Support

Mehmet Emre Ciftcibasi, Yucel Ozdemir, Ergenekon Hassoy and Murat Basaran
RST Inc., Türkiye

NCT.P4 - Improving automatic thunderstorm warnings at DWD

Michael Debertshäuser, Paul James and Manuel Werner
Deutscher Wetterdienst (DWD), Germany

NCT.P6 - Applying RaNDeVIL to severe weather nowcasting to assist air traffic controllers

Laura Esbrí, Tomeu Rigo and Maria Carmen Llasat
Department of Applied Physics, University of Barcelona, Spain



Poster sessions

NCT.P7 - A synergetic approach to study differential reflectivity (ZDR) columns for precipitation

Raquel Evaristo, Ricardo Reinoso-Rondinel, Ju-Yu Chen and Silke Trömel
University of Bonn, Germany

NCT.P8 - Convection Detection for Automatic METAR Reports Based on Radar, Lightning and Model Data

Robert Feger
Deutscher Wetterdienst (DWD), Germany

NCT.P9 - Detection of Hail Pre-Signal using the 3-Dimensional Radar and Temperature data

Woomi Jung, Myoungjae Son, Mi-Kyung Suk and Ik-Hyun Cho
Weather Radar Center, South Korea

NCT.P10 - C-band weather radar comparison of the 24th June 2021 tornado event seen by Austrian, Czech and Slovakian radar network

Rudolf Kaltenboeck, Marián Jurašek and Petr Novak
Austro Control, Austria

NCT.P11 - Define and validate adverse weather areas for air traffic management based on weather radar data

Rudolf Kaltenboeck, Markus Kerschbaum and Martin Steinheimer
Austro Control, Austria

NCT.P12 - Using Dual-Polarization Radars to Nowcast Severe Weather Events

Charles Kuster, Jacob Carlin, Randy Bowers, Terry Schuur, Todd Lindley, Jason Furtado and Jeffrey Snyder
Cooperative Institute for Severe and High-Impact Weather Research and Operations, United States

NCT.P13 - Improvements to Severe Storm Nowcasting in the Czech Hydrometeorological Institute

Hana Kyznarová and Petr Novák
Czech Hydrometeorological Institute, Czechia

NCT.P14 - The relationship between ZDR arcs and storm-relative helicity in simulated tornadic and non-tornadic thunderstorms

Allison LaFleur and Robin Tanamachi
Purdue University, United States

NCT.P15 - How hail fallout affects the accuracy of automated ZDR arc identification: Preliminary Results

Allison LaFleur and Robin Tanamachi
Purdue University, United States

NCT.P16 - Mesocyclone detection at Météo-France

Tony Le Bastard, Clotilde Augros, Jean Imbert and Nicolas Gaussiat
Météo-France, France



Poster sessions

NCT.P17 - Severe convective storm environments of northwestern Italy: differences between coastal and inland areas

Enrico Solazzo, Francesco Battaglioli, Antonio Iengo and Davide Sacchetti
Agenzia Regionale per la Protezione dell'Ambiente Ligure (ARPAL), Italy

NCT.P18 - Recent improvements of KONRAD3D, DWD's scheme for detection, tracking, and nowcasting of convective cells

Manuel Werner, Robert Feger and Lukas Josipovic
Deutscher Wetterdienst (DWD), Germany

NCT.P19 - Lake Victoria Thunderstorms: Radar-Observed Initiation and Storm Evolution Modes

James Wilson and Rita Roberts
National Center for atmospheric Research, Boulder, Colorado U.S.A

QPN NOWCASTING OF PRECIPITATION

QPN.P1 - Development of Radar-Based Nowcasting for Intense Precipitation in the Tropics

Erik Becker, Hidde Leijnse and Remko Uijlenhoet
Centre for Climate Research Singapore; Wageningen University & Research, Singapore

QPN.P2 - Combining object-based cell tracking and optical flow to improve nowcasting of quasi-stationary rainfall

Christian Berndt, Markus Schultze and Manuel Werner
Deutscher Wetterdienst (DWD), Germany

QPN.P3 - Blending of precipitation probability forecasts: weather radar advection and NWP models

Enric Casellas, Aitor Atencia, Jordi Mercader, Jordi Moré, Tomeu Rigo, Abdel Sairouni and Santi Segalà
Meteorological Service of Catalonia, Spain

QPN.P4 - A precipitation phase nowcasting system: weather radar data, NWP forecasts and meteorological observations

Enric Casellas, Joan Bech, Josep Ramon Miró, Abdel Sairouni, Tomeu Rigo, Nicolau Pineda, Jordi Moré and Roger Veciana
Meteorological Service of Catalonia, Spain

QPN.P5 - Metamodeling using GOES-R satellite data for short-term forecasting of precipitation through ConvLSTM model

Otávio Feitosa, Leonardo Calvetti, Fabrício Härter, Laiz Mello, Vinicio Santos and Lucas Marten
National Institute for Space Research (INPE), Brazil

QPN.P6 - Study of optical-flow techniques for precipitation nowcasting based on Radar data in Basque Country

Santiago Gaztelumendi, Aurelio Diaz de Arcaya and Ivan R. Gelpi
Tecnalia - Meteo & Climate / Basque Meteorology Agency, Spain

Poster sessions

QPN.P7 - Predicting precipitation growth and decay with weather radar rainfall measurements

Chen Li, Miguel Rico-Ramirez, Weiru Liu and Dawei Han
Department of Civil Engineering, University of Bristol, United Kingdom

QPN.P8 - A Study on the Motion Vector Calculation of Radar Images Using Optical Flow and Radial Basis Function (RBF)

Sun-Jin Mo, Ji-Young Gu, Jin-Woo Park and Seungwoo Lee
Weather Radar Center, Korea Meteorological Administration, South Korea

QPN.P9 - Evaluation of a deep learning algorithm in radar-based precipitation nowcasting

Ahmed Abdelhalim Ismail Mohamed, Miguel Rico-Ramirez and Dawei Han
University of Bristol, United Kingdom

QPN.P10 - Wind field retrieval and quantitative evaluation from the Italian radar mosaic

Mario Montopoli, Luca Baldini, Elisa Adirosi, Emilio Guerriero and Gianfranco Vulpiani
National Research Council of Italy, Institute of Atmospheric Sciences and Climate (CNR-ISAC), Italy

QPN.P11 - The Operational Finnish Meteorological Institute Probabilistic Precipitation Nowcasting System

Tuuli Perttula, Petteri Karsisto and Harri Hohti
Finnish Meteorological Institute, Helsinki, Finland

QPN.P12 - INTENSE -- The New Seamlessly Combined Precipitation Ensemble Forecasting System at DWD

Martin Rempel, Markus Schultze and Ulrich Blahak
Deutscher Wetterdienst (DWD), Germany

QPN.P13 - Calibration and Temporal Forecast Consistency in an Adaptive Blending of Probabilistic Precipitation Forecasts

Martin Rempel, Peter Schaumann, Reinhold Hess, Ulrich Blahak and Volker Schmidt
Deutscher Wetterdienst (DWD), Germany

ORO OROGRAPHIC PRECIPITATION

ORO.P1 - Three-Dimensional Variational Multi-Doppler Wind Retrieval over complex terrain

Ting-Yu Cha, Michael Bell and Wen-Chau Lee
Colorado State University, United States

ORO.P2 - Precipitation microphysics analysis during winter storms in a inner valley of the Pyrenees using a K-band Doppler radar and disdrometer data

Sergi Gonzalez, Joan Bech, Albert Garcia-Benadí, Mireia Udina, Bernat Codina, Laura Traperó, Alexandre Paci and Jean-François Georgis
Agencia Estatal de Meteorología, Spain

Poster sessions

ORO.P3 - Studying orography-influenced riming and secondary ice production and their effects on precipitation rates using radar polarimetry and radar Doppler spectra

Heike Kalesse-Los, Maximilian Maahn, Anton Kötsche and Isabelle Steinke
Leipzig Institute for Meteorology, University of Leipzig, Germany

ORO.P4 - The Role of the Argentine Mountains on the Discrete Propagation of a Mesoscale Convective System

Kelly Lombardo and Matthew Kumjian
The Pennsylvania State University, United States

ORO.P5 - Supercells in complex territory: a comparison with similar cases in other geographic environments

Tomeu Rigo, Oriol Rodríguez, Joan Bech and Carme Farnell
Servei Meteorològic de Catalunya, Spain

ORO.P6 - The analysis of an orographically strong wind case under clear-air condition during ICE-POP 2018

Chia-Lun Tsai, Kwonil Kim, Yu-Chieng Liou, Jung-Hoon Kim, Yonghee Lee and Gyuwon Lee
Center for Atmospheric REmote sensing, Kyungpook National University, South Korea

ORO.P7 - LACy X band meteorological radar 2022 observations of cyclonic rains in La Réunion

Joël Van Baelen, Ambinintsoa Volatiana Ramanamahefa, Guillaume Lesage, Marc-Antoine Mant and Olivier Bousquet
Laboratoire de l'Atmosphère et des Cyclones (LACy), Saint Denis, La Réunion, France

**TEC
PHASED-ARRAY AND
EMERGING TECHNOLOGIES**

TEC.P1 - Use of X-band Dual Polarisation Phased Array Weather Radar for detection of inclement weather in Hong Kong

Ying Wa Chan
Hong Kong Observatory, Hong Kong

TEC.P2 - A Calibration Method of Phased Array Radar Using Metal Ball Mounted on Unmanned Aerial Vehicle

Haojun Chen, Hao Xue, Chunguang Yin, Haizhen Mu and Henglin Hu
Shanghai Meteorological Information and Technology Support Center, Joint Laboratory of Phased Array Weather Radar, China

TEC.P3 - Design Criteria for Precipitation Measurement Systems based on Satellite Downlink Monitoring

Filippo Giannetti, Fabiola Sapienza, Vincenzo Lottici, Marco Moretti, Giacomo Bacci, Luca Baldini, Luca Facheris, Attilio Vaccaro and Alberto Ortolani
Department of Information Engineering, University of Pisa, Italy

TEC.P4 - Airborne Phased Array Radar (APAR): The Next Generation of Airborne Polarimetric Doppler Weather Radar

Wenchau Lee, Everette Joseph and Krista Laursen
NCAR, United States



Poster sessions

TEC.P5 - Polarimetric phased-array mobile radar observations to understand the rapid evolution of precipitation structures within a United States east coast winter storm

Erin Leghart, Kristofer S. Tuftedal, Edward Luke, Pavlos Kollias and Brian Colle
Stony Brook University, United States

TEC.P6 - Phased Array Radar Observation Operator Sampling of a Downdraft with Melting Hail

Aimee Matland-Dixon, Pierre Kirstetter, Robert Palmer, Alexander Ryzhkov and Jacob Carlin
School of Meteorology, Advanced Radar Research Center, University of Oklahoma, United States

TEC.P7 - Novel measurements of G-band Doppler spectra in cloud ice

Karina McCusker, Chris Westbrook, Alessandro Battaglia, Benjamin M. Courtier, Kamil Mroz, Peter G. Huggard, Hui Wang and Chris J. Walden
University of Reading, Reading, United Kingdom

TEC.P8 - The Horus Digital Phased Array Radar Program at the University of Oklahoma – Status Update and Initial Weather Observations

Robert Palmer, David Schwartzman, David Bodine, Boonleng Cheong, Caleb Fulton, Pierre Kirstetter, Jorge Salazar, Hjlati Sigmarsson, Mark Yearly and Tian Yu
ARRC / University of Oklahoma, United States

TEC.P9 - Understanding what your radar can and can't do: A framework for testing proof-of-concept weather radars

Sebastian Torres, Christopher Curtis and Stephen Gregg
University of Oklahoma, United States

TEC.P10 - Polarimetric Quality and Stability of Calibration of the SKYLER-II Phased-Array Radar System

Kristofer S. Tuftedal, Edward P. Luke, Mariko Oue and Pavlos Kollias
Stony Brook University, United States

TEC.P11 - Pulse Compression for Solid State Weather Radars

Dietmar Veerkamp, Matthias Toussaint and Johannes Vieten
GAMIC GmbH, Germany

**POL
POLARIMETRY**

POL.P1 - One-Dimensional Simulations of Downburst Generation with a Coupled Forward Polarimetric Radar Operator

Jacob Carlin and Alexander Ryzhkov
Cooperative Institute for Severe and High-Impact Weather Research and Operations, University of Oklahoma, United States

POL.P2 - Impacts of Vertical Nonuniform Beam Filling on the Observability of Secondary Ice Production Due to Sublimation

Jacob Carlin, Edwin Dunnavan, Alexander Ryzhkov and Mariko Oue
Cooperative Institute for Severe and High-Impact Weather Research and Operations, University of Oklahoma, United States



Poster sessions

POL.P3 - Improved Dual Polarization Radar Retrievals of Bulk Ice Microphysical Parameters

Edwin Dunnavan, Petar Bukovcic, Alexander Ryzhkov, Jacob Carlin and Jiayi Hu
Cooperative Institute for Severe and High-Impact Weather Research and Operations (CIWRO), NOAA/NSSL, United States

POL.P4 - Dual-polarization X-band radar data at vertical incidence, and what it teaches us

Frederic Fabry, Veronique Meunier, Raman Krishnamoorthy and Alamelu Kilambi
McGill University, Canada

POL.P5 - Hydrometeor classification performance evaluation

Jordi Figueras i Ventura and Nicolas Gaussiat
Météo-France, France

POL.P6 - Identification of bright band echoes using operational s-band dual-polarization radar

Jeong-Eun Lee and Soohyun Kwon
Weather Radar Center, Korea Meteorological Administration, South Korea

POL.P7 - Quality Control Technique Based on Observational Characteristics in Dual-Polarization Measurements

Young-A Oh, Hae-Lim Kim and Mi-Kyung Suk
Weather Radar Center, Korea Meteorological Administration, South Korea

POL.P8 - A new polarimetric method for the melting layer detection and determination of its height

Alexander Ryzhkov and John Krause
University of Oklahoma, United States

POL.P9 - Analysis of polarimetric spectral densities in severe thunderstorms for the identification of lightning-induced signatures

David Schwartzman, Eric Bruning, Tian-You Yu, Vanna Chmielewski, David Bodine and Howard Bluestein
Advanced Radar Research Center, University of Oklahoma, United States

POL.P10 - Calibration of multi-parameter phased array weather radar (MP-PAWR)

Nobuhiro Takahashi
Advanced Radar Research Center, University of Oklahoma, United States

POL.P11 - Verification of a Hydrometeor Classification scheme with the Ruisdael cloud radar at Cabauw

Sibbo van der Veen, Hidde Leijnse, Aart Overeem and Christine Unal
Royal Netherlands Meteorological Institute (KNMI), Netherlands

**QPE1
QUANTITATIVE
PRECIPITATION
ESTIMATION**

QPE1.P1 - Polarimetric Radar Rainfall Retrieval in Eastern São Paulo

Roberto Calheiros, Ana Held, Gerhard Held, Cristiano Eichholz
and Raniele Pinheiro

Meteorological Research Institute, UNESP, Bauru, Brazil - retired since 2011

**QPE1.P2 - Correction of rainfall-induced attenuation at C-band
in Southeastern South America with S-band cross-validation**

Candela Casanovas, Paola Salio, Victoria Galligani and Cesar Beneti

CIMA-UBA (CONICET), Argentina

**QPE1.P3 - Evaluation of High-Resolution Precipitation Estimates Using
Electromagnetic Wave Rain Gauge(EWRG)**

Jeongho Choi, Sanghun Lim and Myoungsun Han

Chosun College of Science & Technology, South Korea

**QPE1.P4 - Improvement of automatic rain gauge checks relevant to radar
data adjustment**

Claudia Fennig, Thomas Einfalt and Markus Jessen

hydro & meteo GmbH, Germany

QPE1.P5 - Improvements to DWD's QPE within SINFONY

Matthias Gottschalk, Thomas Hengstebeck and Ulrich Blahak

Deutscher Wetterdienst (DWD), Germany

QPE1.P6 - Effects of radar data resolution on the analysis of extreme events

Markus Jessen and Thomas Einfalt

Deutscher Wetterdienst (DWD), Germany

**QPE1.P7 - Guiding the Improvement of the Global Precipitation
Measurement Mission with Radar Networks**

Pierre Kirstetter, David B. Wolff, Yagmur Derin, Dominique Faure, Nicolas Gaussiat,
Veljko Petkovic, Joël Van Baelen, Olivier Bousquet and Jonathan J. Gourley

University of Oklahoma & National Severe Storms Laboratory, United States

**QPE1.P8 - Probabilistic Quantitative Precipitation Estimation
with Ground- and Space-based Radars**

Pierre Kirstetter, Micheal Simpson, Jian Zhang, Jonathan J. Gourley,
Steven Martinaitis and Nathaniel Indik

University of Oklahoma & National Severe Storms Laboratory, United States

QPE1.P9 - Supporting Weather Radar Observations with the Vaisala FD70

Dirk Klugmann, Lasse Kauppinen, Robinson Wallace and Jordan Santillo

Vaisala Oyj, Finland

**QPE1.P10 - Challenges and potential use of high-resolution X-band weather
radar data in agriculture in northeast Germany**

Alice Künzel, Kai Mühlbauer, Christian Hohmann, Velibor Pejčić, Daniel Spengler
and Sibylle Itzerott

Helmholtz Centre Potsdam – GFZ German Research Centre for Geosciences, Germany

Poster sessions

QPE1.P11 - Detection of beam blocking using a long term statistical characteristics of dual-polarization observation

Gyuwon Lee, DaeHyung Lee, Choeng-Lyong Lee, Geunsu Lyu, Wonbae Bang, Hong-Mok Park and Alexander Ryzhkov

Department of Astronomy and Atmospheric Sciences, Kyungpook National University, Daegu, South Korea

QPE1.P12 - Radar QPE for the Netherlands

Hidde Leijnse and Aart Overeem

Royal Netherlands Meteorological Institute (KNMI), Netherlands

QPE1.P13 - Automatic Objective Evaluation of Radar Products in the Operational Production context at Environment and Climate Change Canada

Ahmed Mahidjiba, Meriem Kacimi, Rabah Hachelaf, Yacine Bouzid, Ilyass Hajji, Sudesh Boodoo, Janti Reid and Corinne Simard

Environment and Climate Change Canada, Government of Canada

QPE2 QUANTITATIVE PRECIPITATION ESTIMATION

QPE2.P1 - Anomalous electromagnetic wave propagation and rainfall estimates with microwave links

Malte Neuper and Jan Handwerker

Karlsruhe Institute of Technology, Institute of Water and River Basin Management - Chair of Hydrology, Germany

QPE2.P5 - VPR correction methods for MF radars

Shaik Allabakash, Figueras I Ventura Jordi and Gaussiat Nicolas

Météo-France, France

QPE2.P6 - Quantitative rainfall estimation method for X-band dual polarization radars in Korea

Jae In Song, Sanghun Lim and Kyusoo Chong

Korea Institute of Civil Engineering and Building Technology, South Korea

QPE2.P7 - Australia-wide high resolution precipitation data: What is possible?

Alexander Strehz, Thomas Einfalt, Dan Zhang, Joost Brombacher and Lucas Ellerbroek

hydro & meteo GmbH, Germany

QPE2.P8 - Quality control algorithms for precipitation data from private meteorological stations using weather radar data

Jan Szturc, Katarzyna Ośródkka, Magdalena Pasierb and Anna Jurczyk

Institute of Meteorology and Water Management - National Research Institute, Poland

QPE2.P9 - Fusion of multiple precipitation sensors in Skåne, Sweden

Remco van de Beek and Jonas Olsson

SMHI, Sweden

Poster sessions

QPE2.P10 - Comparison of the radar profiling algorithms for S-band radar by simulation : consequence of the hypothesis of constant scaled drop concentration (Nw) over range

Nan Yu and Nicolas Gaussiat
Météo-France, France

QPE2.P11 - A dual-pol VPR correction for operational radar QPE

Jian Zhang and Wolfgang Hanft
NOAA, National Severe Storms Lab, United States

QPE2.P12 - Addressing data quality issues for gap-filling solid-state polarimetric X-band radars

Pengfei Zhang, Alexander Ryzhkov, Robert Stafford and Michael Knight
University of Oklahoma, United States

QPE2.P13 - Rainfall estimation using specific attenuation with a new alpha optimization method

Pengfei Zhang, Alexander Ryzhkov and Stephen Cocks
University of Oklahoma, United States

**NWP
RADAR IN NUMERICAL
WEATHER PREDICTION**

NWP.P1 - Observed and simulated dual polarization signatures in supercell storms over France and potential application for nowcasting

Clotilde Augros, David Cloé, Benoît Vié and Vincent Forcadell
CNRM, Université de Toulouse, Météo-France, CNRS, Toulouse

NWP.P2 - Evaluation of high-resolution NWP-based precipitation reanalyses with adjusted radar-derived precipitation

Vojtěch Bližňák and Petr Zacharov
Institute of Atmospheric Physics CAS, Czechia

NWP.P3 - A comparison study on the radar radial velocity forward model for the KIAPS data assimilation system

In-Hae Cho and Jeon-Ho Kang
InKIAPS(Korea Institute of Atmospheric Prediction Systems), South Korea

NWP.P4 - Verification of precipitation and cloud simulation of KIM using radar measurements

Sujeong Cho and Eun-Hee Lee
Korea Institute of Atmospheric Prediction System, South Korea

NWP.P5 - Development of LETKF-based radar data assimilation methods for high-resolution forecasting over Korea

Dayoung Choi, Adam Clayton, Kwangjae Sung, Jeon-Ho Kang and In-Hyuk Kwon
Korea Institute of Atmospheric Prediction System, South Korea

NWP.P6 - Study of radar data assimilation for precipitation nowcasting in Basque Country

Santiago Gaztelumendi, Ivan R. Gelpi and Aurelio Diaz de Arcaya
Tecnalia - Meteo & Climate / Basque Meteorology Agency, Spain

Poster sessions

NWP.P7 - Convective cloud microphysics in numerical weather prediction models and dual-wavelength polarimetric radar observations

Gregor Köcher, Tobias Zinner, Christoph Knoté, Eleni Tetoni, Florian Ewald, Martin Hagen and Bernhard Mayer
Ludwig Maximilians University, Germany

NWP.P8 - The ICON/COSMO polarimetric radar forward operator EMVORADO and its application for model evaluation

Jana Mendrok, Prabhakar Shrestha, Velibor Pejčić, Jacob Carlin, Jeffrey Snyder, Silke Trömel and Ulrich Blahak
Deutscher Wetterdienst (DWD), Germany

NWP.P9 - Assimilation of Advanced Remote Sensing Data to Improve Numerical Model Prediction

Ki-Hong Min and Miranti Indri Hastuti
Kyungpook National University, South Korea

NWP.P10 - Intercomparing radar data assimilation systems for ICE-POP 2018 snowfall cases

Ki-Hong Min, Ji-Won Lee, Kao-Shen Chung, Cheng-rong You and Gyuwon Lee
Kyungpook National University, South Korea

NWP.P11 - Polarimetry-based hydrometeor classification from synthetic and measured radar observations for the evaluation of hydrometeor mixtures in numerical weather prediction models

Velibor Pejčić, Jana Mendrok, Ulrich Blahak and Silke Trömel
Institute for Geosciences, Department of Meteorology, University of Bonn, Germany

NWP.P12 - Operational assimilation of radar reflectivity and radial wind volumes in the COSMO model at Arpae-SIMC

Virginia Poli, Thomas Gastaldo, Chiara Marsigli, Davide Cesari and Pier Paolo Alberoni
Arpae Emilia-Romagna, Struttura IdroMeteoClima, Italy

NWP.P13 - Characterisation of rainfall estimates and forecast skill of NWP model regions in Australia

Jayaram Pudashine, Carlos Velasco-Forero, Mark Curtis and Alan Seed
Bureau of Meteorology, Australia

NWP.P14 - Estimator-based assimilation of dual-polarimetric radar observations in Germany

Lucas Reimann, Clemens Simmer, Silke Trömel and Roland Potthast
Institute for Geoscience, Department of Meteorology, University of Bonn, Germany

NWP.P15 - A method for information gain in the process of weather radar data assimilation into WRF model

Luca Rovai, Andrea Antonini, Riccardo Benedetti, Luca Fibbi, Samantha Melani, Alberto Ortolani and Bernardo Gozzini
LaMMA Consortium, CNR-IBE, Italy

Poster sessions

NWP.P16 - Polarimetric retrievals of ice water content (IWC), total number concentration (Nt) and mean volume diameter (Dm) for improved parametrizations

Tobias Scharbach and Silke Trömel
University of Bonn, Germany

NWP.P17 - A change in methodology for Latent Heat Nudging at DWD

Klaus Stephan
Deutscher Wetterdienst (DWD), Germany

NET.P1 - A Variational Interpolation Method for Gridding Weather Radar Data

Jordan Brook, Alain Protat, Joshua Soderholm, Robert Warren
and Hamish McGowan
University of Queensland, Australia

NET.P2 - The new Lombardia X-band radar network

Orietta Cazzuli, Gian Paolo Minardi, Michele Calabrese, Antioco Vargiu,
Edoardo Peroni, Giulio Camisani and Enrico Solazzo
ARPA Lombardia, Italy

**NET
RADAR IN NUMERICAL
WEATHER PREDICTION**

NET.P8 - Withdrawn

NET.P3 - Towards a single global standard for polar weather radar data representation with FM301 – CfRadial2

Mark Curtis, Michael Dixon, Heather Grams, Blake McGuire and Daniel Michelson
Bureau of Meteorology, Australia

NET.P4 - Analysis and Discussion of the 2021 WMO Joint Expert Team on Operational Weather Radars (JET-OWR) Weather Radar Survey Results

Sinéad Duffy, Richard Stedronsky, Blake McGuire and Pekka Utela
Met Éireann, Ireland

NET.P5 - Centralisation in mainland France of the weather radar data processing system for the French overseas territories

Dominique Faure, Axel Deloncle, Isabelle Sanchez, Sylvain Chaumont, Jean Millet, Valérie Vogt, Béatrice Fradon and Nicolas Gaussiat
Météo-France, France

NET.P6 - Exploring efficient use of X-band Dual-Polarization Radar Network in the Korean Peninsula

Ji-Young Gu, Jin-Woo Park, Sun-Jin Mo and Seungwoo Lee
Weather Radar Center, Korea Meteorological Administration, South Korea

NET.P7 - Multi-Radar Multi-Sensor System (MRMS)

Kenneth Howard and Jian Zhang
NOAA/NSSL, United States

Poster sessions

NET.P9 - Radar-based tracking of convective cell lifecycles using the Multisensor Agile Adaptive Sampling (MAAS) framework

[Pavlos Kollias](#), Bernat P. Treserras, Edward P. Luke, Kristofer S. Tuftedal, Mariko Oue, Katia Lamer and Zackary Mages
Stony Brook University, United States

NET.P10 - Replacement of the Canadian Weather Radar Network – an Update

[Qian Li](#), Sylvain Laramée, Peter Leibiuk, Sorin Pinzariu, Steven Brady and Alvin Au Duong
Canadian Weather Radar Replacement Program, Environment and Climate Change Canada

NET.P11 - Analysis of data of a recent disdrometer network to improve the quality of the radar products at the coast

[Mercedes Maruri](#), Monica Barturen and Santiago Gaztelumendi
Tecnalia - Meteo & Climate Area / University of the Basque Country, Spain

NET.P12 - The FARM (Flexible Array of Radars and Mesonets)

[Joshua Wurman](#), Karen Kosiba, Jeff Trapp and Steve Nesbitt
Flexible Array of Radars and Mesonets, University of Illinois, United States

NET.P13 - Quickly Deployable/Adaptable S-band radar network integrated with bistatic network

[Joshua Wurman](#) and Karen Kosiba
Flexible Array of Radars and Mesonets, University of Illinois, United States

RSP RADAR SIGNAL AND DOPPLER PROCESSING

RSP.P1 - A new approach for addressing correlation coefficient estimator bias at low signal-to-noise ration

[Christopher Curtis](#)
CIWRO/NSSL, United States

RSP.P2 - An adaptive range-averaging to improve the quality of radar variable estimates at low-to-moderate SNRs

[Igor Ivic](#)
CIWRO/NSSL, United States

RSP.P3 - An augmented Lagrangian technique for multiple Doppler retrievals

[Robert Jackson](#), Matt Menickelly and Scott Collis
Argonne National Laboratory, United States

RSP.P4 - Next phase of the lidar radar open software environment (LROSE) as a science gateway

[Brenda Javornik](#), Jennifer DeHart, Michael Bell, Mike Dixon, Ting-Yu Cha and Wen-Chau Lee
National Center for Atmospheric Research, United States

RSP.P5 - Estimation of horizontal wind from Doppler data

[Léo Loyant](#), Tony Le Bastard and Nicolas Gaussiat
Météo-France, France



Poster sessions

RSP.P6 - Vertical wind estimation with a 94-GHz cloud radar for enhanced DSD estimation using Mie extrema.

Albert Oude Nijhuis, Christine Unal, Marc Schleiss, Yann Dufournet and Herman Russchenberg
SkyEcho, Netherlands

RSP.P7 - Understanding the Complementarity of Wind Measurements from Co-located X-band Weather Radar and Doppler Lidar.

Jenna Ritvanen, Dmitri Moisseev, Ewan O'Connor, Ludovic Thobois, Raisa Lehtinen and Jani Tyynelä
Finnish Meteorological Institute, Helsinki, Finland

RSP.P8 - Forward method for vertical air motion estimation from frequency modulated continuous wave radar rain measurements

Andreu Salcedo-Bosch, Francesc Rocadenbosch, Stephen Frasier and Paula Domínguez-Pla
Universitat Politècnica de Catalunya, Spain

RSP.P9 - The Mitigation of Debris-Induced Bias in Tornadic Doppler Velocity Measurements

Morgan Schneider, David Bodine, Sebastian Torres, Robert Palmer, Boonleng Cheong, Caleb Fulton, Casey Griffin, Rachael Cross, Howard Bluestein, Takashi Maruyama and Javier Lujan
School of Meteorology, University of Oklahoma, United States

RSP.P10 - Improving the Data Quality of Polarimetric Variables using Hybrid Scan Estimators

David Warde and Sebastian Torres
CIWRO, United States

SNO SNOWFALL

SNO.P1 - Ground-based, mobile, polarimetric, Doppler-radar measurements in two snowstorms in the Northeastern U. S. during IMPACTS in 2022

Howard Bluestein, David Schwartzman, Samuel Emmerson, Danny Feland, Dale Sexton, Boonleng Cheong, Tian You Yu and Gerald Heymsfield
School of Meteorology/University of Oklahoma, United States

SNO.P2 - Precipitation type analysis using a hydrometeor classification of high-resolution radar data – evaluation results of winter season 2021/2022 at Deutscher Wetterdienst

Tim Böhme and Markus Schultze
Deutscher Wetterdienst (DWD), Germany

SNO.P3 - Operational implementation of snow liquid water equivalent estimation for the Canadian S-band weather radar network

Sudesh Boodoo, Emma Hung, Janti Reid, Norman Donaldson and Daniel Michelson
Environment and Climate Change Canada



Poster sessions

SNO.P4 - Radar observation of the rain-snow transition from space and from the ground

Brice Boudevillain, Arnaud Reboud, Fanny Brun, Thomas Condom, Frederic Cazenave, Guy Delrieu and Anil Khanal

Univ. Grenoble Alpes, IRD, CNRS, Grenoble INP, IGE, 38000 Grenoble, France

SNO.P5 - Combining Dual-Polarization Radar with Lagrangian Trajectories and a Spectral Bin Microphysics Model to Improve Snow Nowcasting

Edwin Dunnavan, Jacob Carlin and Alexander Ryzhkov

Cooperative Institute for Severe and High-Impact Weather Research and Operations (CIWRO), NOAA/NSSL, United States

SNO.P6 - ERUO: a spectral processing routine for snowfall measurements collected by the MRR-PRO

Alfonso Ferrone and Alexis Berne

Environmental Remote Sensing Laboratory, École Polytechnique Fédérale de Lausanne, Switzerland

SNO.P7 - MASCDB: a database of images, descriptors and microphysical properties of individual snowflakes in free fall

Jacopo Grazioli, Gionata Ghiggi, Alexis Berne and Anne-Claire Billault-Roux

Environmental Remote Sensing Laboratory, École Polytechnique Fédérale de Lausanne, Switzerland

SNO.P8 - Cloud radar-based snowfall estimates during MOSAiC expedition

Sergey Matrosov, Taneil Uttal and Matthew Shupe

University of Colorado and NOAA Physical Sciences Laboratory, United States