

(Paris, France, 10-13 October 2022)

## Preliminary programme (as of 8 July 2022)

<b>Topic 1: Innovative measurements, techniques and integration</b>				
<b>No.</b>	<b>O/P<sup>1*</sup></b>	<b>Title</b>	<b>Author</b>	<b>Country</b>
1	O	Using Machine Learning to Improve Data Quality and Thus Meteorological Decisions and Alerting	Mr Brian Bellew	United States of America
2	O	New instrument for automatic pollen monitoring networks	Mr Philipp Burch et al.	Switzerland
3	O	The first evaluation of a 6-months automatic Meteodrone campaign	Dr Maxime Hervo et al.	Switzerland
4	O	Experimental observation of air temperature rise due to the reflection of solar radiation above the clouds	Dr Yong-Gyoo Kim et al.	Republic of Korea
5	O	Day and Night-time Estimation of Aerosol extinction coefficients at RGB wavelength and visibility distance by Using Digital Camera	Prof Dukhyeon Kim et al.	Republic of Korea
6	O	Sustainable rain monitoring using communication links of existing broadband satellite networks	Dr Julian Krebs et al.	Luxembourg
7	O	Image-based flow measurements during flood events	Dr Salvador Peña-Haro et al.	Switzerland
8	O	Development of a New Cloud/Precipitation Particle Imaging Radiosonde Using the 400-MHz Meteorological Band	Dr Kensaku Shimizu et al.	Japan
9	O	Recent improvements of Wind Doppler Lidars for building observing networks	Dr Ludovic Thobois et al.	France
10	O	SKIRON3D: A Novel 3D Scanning Doppler Wind Lidar Featuring Four Independent Wavelength-Channels – Application to Wind and Wake Vortex Monitoring with the same Instrument	Dr Albert Töws et al.	Germany
11	O	Towards radiatively immune thermometry in weather stations	Dr Stephanie Bell et al.	United Kingdom of Great Britain and Northern Ireland
12	O	Sustained low-cost ocean observations and access to underserved communities	Mr Sebastien O.C. Boulay	United States of America
13	O	Cognitive camera enhanced software defined method for automatic rainfall measurement	Mr Amul Batra et al.	India
14	O	Transfer Learning with Change Monitoring for Camera-based Snow Detection	Mr Jean-Philippe Andreu et al.	Austria

<sup>1</sup>(O – oral presentation, P – poster presentation)

15	O	Siting and Exposure Investigation of Weather Stations using Drones	Dr Jitze Van der Meulen et al.	Netherlands
16	P	Edge Computer for Automatic Weather Station	Mr Jorma Islander	Finland
17	P	Development of an Automated Intensity Correction for the new RainVUE Tipping Bucket Rain Gauge	Dr Dirk V Baker et al.	United States of America
18	P	WindBorne Systems Global Sounding Balloons	Mr Todd Hutchinson et al.	United States of America
19	P	Latest developments on Vaisala broadband DIAL with examples	Dr Minttu Tuononen	Finland
20	P	SwissPollen: an end-to-end real-time pollen monitoring network	Dr Benoit Crouzy et al.	Switzerland
21	P	Statistical analysis and clusterization of environmental parameters measurements from co-located sensors	Dr Graziano Coppa et al.	Italy
22	P	Development and use of LoRaWAN IoT technology for data acquisition and transmission in remote areas: the "case history" of the Experimental Meteorological Monitoring Project in the Pian Cansiglio Regional Forest - Italy	Dr Andrea Costantini et al.	Italy
23	P	Validation and traceability of multi-parameter miniaturized radiosondes for environmental observations.	Dr Shahbozbek Abdunabiev et al.	Italy
24	P	Towards a single global standard for polar weather radar data representation with FM301 – CfRadial2	Mr Mark Curtis et al.	Australia
25	P	An Aerosol Extinction Coefficient Retrieval Method and Characteristics using landscape images	Prof Dukhyeon Kim	Republic of Korea
26	P	Detection of raised inversions by measuring the IR temperature.	Dr Alexander Kochin	Russian Federation
27	P	Measurement of the vertical extent of the optical radiation absorbing layer in the troposphere	Dr Alexander Kochin	Russian Federation
28	P	Automatic unmanned mobile system for atmosphere parameters profiling by means of remote sensing instruments.	Dr Arkadii Koldaev et al.	Russian Federation
29	P	Estimation of Water Depth on Airport Runway based on Rain Rate Measurement from Transmissometers	Ms Hiu Yan Li et al.	Hong Kong, China
30	P	A novel algorithm for improving the confidence in automated snow depth measurements	Mr Darren Lyth	United Kingdom of Great Britain and Northern Ireland
31	P	IMPROVING THE HYDROMETEOROLOGICAL OBSERVATION AND SERVICE ON THE BASIS OF USING MODERN INFORMATION TECHNOLOGIES	Dr Viacheslav Manukalo et al.	Ukraine
32	P	Evaluation of a new filtering algorithm for precipitation data from Geonor weighing gauges	Dr Wolff Mareille et al.	Norway
33	P	ASSESSING THE EFFICACY OF INTEGRATING INDIGENOUS KNOWLEDGE SYSTEMS INTO MODERN WEATHER OBSERVATIONAL INSTRUMENTS, A CASE OF UGANDA	Ms Harriet Namulindwa et al.	Uganda
34	P	Towards an operational, remotely-controlled network of meteorological drones to perform atmospheric profiling	Dr Matthias Piot et al.	Switzerland

35	P	Disruptive tools to advancing CC adaptation and mitigation while keeping 1.5°C limit alive: innovative ideas from the ICS-Lisbon Searchers	Ms Yvette RAMOS et al.	Portugal
36	P	Improving runway visual range calculation using an optimized optical parameter	Mr Yashar Rostami et al.	Iran, Islamic Republic of
37	P	Development of a method for measuring the fall velocity of precipitation particles using a new particle imaging radiosonde	Prof Kenji Suzuki et al.	Japan
38	P	The characteristics of radiosonde descent data by dual receiving experiment	Mrs So-Ra IN et al.	Republic of Korea
39	P	Innovative Low-Cost Instrumentation to Support Agriculture and Hydrometeorological Applications	Dr Paul Anthony Kucera et al.	United States of America
40	P	The Next Generation of Digitalisation of Surface Meteorological Observation on 76 Meteorological Stations in Indonesia	Mr Sugiarto Sugiarto et al.	Indonesia
41	P	DEVELOPMENT OF GLOBAL RADIATION SENSOR USING LOCALLY SOURCED MATERIALS	Dr BABATUNDE ABRAHAM OKUNLOLA	Nigeria
42	P	Development of a new concept of smart weather stations for a dense and homogeneous observation network based on LowCost 3D printing technology-Case study for an integrated approach to region I Africa	Mr Mounir AZIZ	Morocco

<b>Topic 2: Intercomparisons and characterization of instruments and methods</b>				
<b>No.</b>	<b>O/P</b>	<b>Title</b>	<b>Author</b>	<b>Country</b>
43	O	A comparison of precipitation measurement from multiple instruments	Dr Bikas Chandra Bhattarai et al.	Norway
44	O	The EUMETNET AutoPollen-ADOPT International Intercomparison Campaign: An overview and key results	Dr Benoît Crouzy et al.	Switzerland
45	O	COAT Project: Intercomparison of thermometers and radiation shields in polar climate	Dr Carmen Garcia Izquierdo et al.	Spain
46	O	Irish Weather Buoy Development and Rogue Wave Observations	Mr Donal Kennedy et al.	Ireland
47	O	Results from the 13th International Pyrheliometer Comparisons IPC-XIII	Dr Wolfgang Finsterle	Switzerland
48	O	Results from A Multi-year Analysis of All-In-One Meteorological Observing Sensors	Dr Bradley Illston	United States of America
49	O	Performance Analysis of Marine Automatic Weather Station in Anak Krakatau Volcano to Monitor Environmental Condition and Volcanic Landslide Tsunami	Mr Sugiarto Sugiarto et al.	Indonesia
50	O	Continental Scale Study of the Influence of Screens and Siting on Temperature Measurement	Dr Warne Jane et al.	Australia
51	O	Using the measured particle size distribution to assess the wind induced undercatch of catching-type gauges	Dr Arianna Cauteruccio et al.	Italy
52	O	Pyranometer intercomparison at the BSRN site in Cabauw, the Netherlands	Dr Tiemo Mathijssen et al.	Netherlands
53	P	Radiation correction on temperature measured by dual thermistor radiosondes at nighttime.	Dr Sang-Wook Lee et al.	Republic of Korea
54	P	Challenges of measurement trace elements with Inductively coupled plasma mass-spectrometer in different environmental media	Dr Gayane Shahnazaryan et al.	Armenia
55	P	Precipitation measurements in Switzerland: Considerations of WMO SPICE at MeteoSwiss	Dr Jörg Klausen et al.	Switzerland
56	P	Evaluation of All-in-One Weather Instrument against the WMO Measurement Quality Classification Scheme.	Dr Jane Mazzini et al.	Australia
57	P	Intercomparison Radiosonde of upper air station observations	Mrs Zeinab Aly et al.	Egypt
58	P	Radiometer Measurement using Absolute Cavity Radiometer at Regional Calibration Center at Pune, India	Mr ANJIT ANJAN	India
59	P	Questionnaire for Radiosonde manufacturers intended to participate in the Radiosonde intercomparison (UAII-2022)	Mr Mohammed Imran ANSARI et al.	India
60	P	Cost/benefit decisions for choosing the right gauge configuration under wet snow conditions	Dr Samuel Buisan et al.	Spain
61	P	WIND TUNNEL VALIDATION OF A PARTICLE TRACKING MODEL TO EVALUATE THE WIND-INDUCED BIAS ON RAINFALL MEASUREMENTS	Dr Arianna Cauteruccio et al.	Italy
62	P	Computational Fluid Dynamics and wind tunnel investigation of the aerodynamic response of the Thies LPM	Mr Enrico Chinchella et al.	Italy

63	P	E-Surfmar Barometer intercomparison	Mr Jean-Baptiste COHUET et al.	France
64	P	Intercomparison of Vaisala RS92 and RS41 Radiosonde Temperature Sensors under Controlled Laboratory Conditions	Dr Graziano Coppa et al.	Italy
65	P	Intercomparasson between weather Radar products and satellite images	Mr Sabry El_Fouly	Egypt
66	P	Comparison of wind speed measurements between small and miniature Doppler Sodars and a Lidar	Mr Jean-Michel FAGE	France
67	P	An Open-Source Documentation and Implementation of the Vaisala RS41 Data Preparation Algorithms	Mr Johannes Frielingsdorf	Germany
68	P	The South African Weather Service (SAWS) abstract on main topic (2): Intercomparisons and characterization of instruments and methods, bullet (1) Instrument intercomparisons – current initiatives and projects, methods, techniques, performance, analyses, and results to be addressed at the Conference	Mr Rydall Brendon Jardine et al.	South Africa
69	P	Effects of umbrella above the thermometer screen on the surface air temperature	Mr Sunghun Kim et al.	Republic of Korea
70	P	Intercomparison of Precipitation Measurements at Climate Reference Stations in Germany	Ms Isabel Knerr et al.	Germany
71	P	Radar precipitation technology compared with the WMO precipitation reference	Dr Jorge Monforte et al.	Spain
72	P	Activities of the EUMETNET Working Group on Crowdsourcing	Ms susie nicolau et al.	France
73	P	Metrological characterization of non-catching precipitation instruments: Influence of Air temperature and humidity	Ms Marina Parrondo et al.	Spain
74	P	ERGONOMIC WIND DIRECTION SENSOR DESIGN	Mr Çakıl Salih et al.	Turkey
75	P	Modernisation of the Basque AWS network : rain gauges	Mr Gaztelumendi Santiago et al.	Spain
76	P	Analysis of parallel air temperature and humidity measurements in the observation manned station of the wet tropics with digital psychrometric.	Mr Ariffudin Ariffudin et al.	Indonesia
77	P	Intercomparison of Precipitation Gauges at KNMI in De Bilt	Mr Michael Quinlan et al.	Netherlands
78	P	COMPARISON BETWEEN MERCURE DIGITAL THERMOMETER FROM METSPEC AND MERCURY-IN-GLASS THERMOMETERS IN CATALONIA	Mr Ricard Ripoll et al.	Spain
79	P	Adaptive diffraction corrections in solar radiometry, a prerequisite for the ISO 9060:2018 AA class	Dr Markus Suter et al.	Switzerland

### Topic 3: Traceability of measurements to recognized standards

No.	O/P	Title	Author	Country
80	O	WIND DIRECTION SENSOR CALIBRATION METHOD AND PROCEDURE	Mr SALİH ÇAKIL	Turkey
81	O	experimental evaluation of the effect of presence of obstacles in the vicinity of sites hosting near surface meteorological measurement. The case of the road.	Dr Graziano Coppa et al.	Italy
82	O	Metrology for aerosol optical properties	Dr Julian Gröbner	Switzerland
83	O	The INCIPIT project: calibration and accuracy of non-catching instruments to measure liquid/solid atmospheric precipitation	Dr Andrea Merlone et al.	Italy
84	O	Dynamic Characterization of Humidity Sensors Using a Novel H <sub>2</sub> O Vapor Step Change Generator with Traceable Sampling-free Online Monitoring	Mr Felix Witt et al.	Germany
85	O	Results, recommendations and challenges of the first ILC campaign at RA-I Africa	Mr Mounir AZIZ	Morocco
86	P	What if you don't mow the lawn under your air temperature sensor?	Dr Mareile Wolff et al.	Norway
87	P	Air temperature measurements: issues with the measurand, measurement traceability and uncertainty evaluation	Dr Andrea Merlone et al.	Italy
88	P	In-situ calibration and field inspection to optimize AWS network calibration intervals	Mr Mounir AZIZ	Morocco
89	P	A calibration device for non-catching rain gauges	Mr Enrico Chinchella et al.	Italy
90	P	Improving the uncertainty of calibration of radiosonde thermistors in a climate chamber by reducing spatial temperature deviations	Mr Youngsuk Lee et al.	Republic of Korea
91	P	Metrological evaluation of 2016/17 air temperatures records of 54.0 °C within the WMO validation process.	Dr Andrea Merlone et al.	Italy
92	P	Experimental evaluation of the effect of snow-covered ground albedo on air temperature measurements accuracy.	Dr Chiara Musacchio et al.	Italy

**Topic 4: Measurement quality assurance and quality control**

<b>No.</b>	<b>O/P</b>	<b>Title</b>	<b>Author</b>	<b>Country</b>
93	O	Quality controls applied to opportunistic data for agriculture	Dr Anne-Lise BEAULANT et al.	France
94	O	Quantification of the Impact of Observations on Global NWP Model Forecasts using FSOI Analysis	Dr Sharon Jewell et al.	United Kingdom of Great Britain and Northern Ireland
95	O	The 2021 ASOPOS (Assessment of Standard Operating Procedures (SOPs) for OzoneSondes) 2.0 WMO/GAW Report 268: Global OzoneSonde Best Practices	Dr Anne M Thompson et al.	United States of America
96	O	Observations of Atmospheric Carbon Dioxide Concentrations in Hong Kong	Dr Hok-yin LAM et al.	Hong Kong, China
97	O	Siting Classification – a critical review of member experiences, guidelines for implementations and further development	Dr Mareile Wolff et al.	Norway
98	O	Analysis of Netatmo Data Quality within the London Model Domain	Mr Matthew Fry	United Kingdom of Great Britain and Northern Ireland
99	P	Measurements uncertainty in meteorology and climatology: joint efforts to improve knowledge	Dr Andrea Merlone et al.	Italy
100	P	Managing temperature extremes - using classification schemes to sort stations with differences in quality	Ms Nina Larsgård et al.	Norway
101	P	Long Term WMO-GAW OzoneSonde QA/QC and Data Quality Improvements: The 25th Anniversary of the Juelich Ozone Sonde Intercomparison Experiment (JOSIE)	Dr Herman G.J. Smit et al.	Germany
102	P	Homogenization of the Long-Term Global OzoneSonde Records	Dr Roeland Van Malderen et al.	Belgium
103	P	Solar-based calibration and monitoring of dual-polarization radar receivers using two complementary methodologies	Dr Marco Gabella et al.	Switzerland
104	P	Italian Air Force Mountain Centre – environmental measurements in impervious natural environment	Mr Daniele Biron et al.	Italy
105	P	How do the ocean and meteorological observations describe the gale?	Ms Manuela Álvarez et al.	Spain
106	P	Sustenance of Global Climate Observation System Upper Air Network (GUAN) standard network of India Meteorological Department	Mr Mohammed Imran ANSARI et al.	India
107	P	EVALUATION OF THIRD-PARTY AUTOMATIC WEATHER STATIONS FOR THE INTEGRATION AND EXPANSION OF THE REFERENCE NETWORK	Mr Gonzalo Martín Díaz et al.	Argentina
108	P	Automatic Quality Control in the RMI AWS Network	Mr Luis Gonzalez Sotelino	Belgium
109	P	Processing of historical data from the Basque AWS network	Mr Roberto Hernandez et al.	Spain

110	P	Monitoring time series of relative humidity in saturation situations	Ms Mercedes Maruri et al.	Spain
111	P	Could coastal buoys improve beach management?	Dr Mercedes Maruri et al.	Spain
112	P	Disdrometers. Explore analysis of the visibility records.	Dr Mercedes Maruri et al.	Spain
113	P	Measurement quality assurance and quality control in Costa Rica.	Mrs Martha Eugenia Pereira Molina	Costa Rica
114	P	Measurement quality assurance and quality control	Mr Atayeb Omer Shuaib Mohamed et al.	Sudan
115	P	Calibration of the Z-R Relationship using spectro-pluviometer data	Mr TAREQ SOUBAI et al.	Morocco
116	P	Quality control techniques of the observed data used	Mr HAMMOUDY Wahib et al.	Morocco
117	P	Development of Machine Learning Retrieval Algorithm for Ground Based Microwave Radiometer	Dr Reno Kyu-Young Choi et al.	Republic of Korea
118	P	Validation and uncertainty characterization of the water vapor mixing ratio measured by the MeteoSwiss Raman lidar and advanced experiments towards operational assimilation	Dr Giovanni Martucci et al.	Switzerland
119	P	DEVELOPPING THE NATIONAL REGULATORY DOCUMENTS FOR HYDROMETEOROLOGICAL OBSERVATIONS IN UKRAINE: CURRENT STAGE AND FUTURE PRIORITIES	Dr Viacheslav Manukalo et al.	Ukraine
120	P	To The Method For Assessing Damage From Hailstorm.	Dr Hasan Imamdzhanov et al.	Uzbekistan
121	P	Monitoring of surface water quantity in Slovakia	Mr Peter Spál et al.	Slovakia



**Topic 5: Capacity development towards quality measurements and sustainability**

<b>No.</b>	<b>O/P</b>	<b>Title</b>	<b>Author</b>	<b>Country</b>
122	O	Organization experience with personnel competences related to installing, operating, calibration and maintenance of equipment: Zimbabwe Meteorological Services Department ( ZMSD)	Mr Webster Magwaro	Zimbabwe
123	O	Addressing Capacity Development with a focus on gender balance and engagement of young experts in the WMO Earth Observing Systems and Monitoring Networks	Dr Venkatesan R. et al.	India
124	O	JMA International Collaboration in the field of Meteorological Instrument Calibration	Mr Hiroumi Shigeoka	Japan
125	O	AUTOMATION OF THE PRECIPITATION GAUGE NETWORK OF THE NATIONAL INSTITUTE OF METEOROLOGY AND HYDROLOGY, BULGARIA. CHALLENGES IN THE ADAPTATION OF THE METHODOLOGY OF OBSERVATIONS TO THE REQUIREMENTS.	Mrs Stanislava Radeva et al.	Bulgaria
126	P	Collaborative systematic design evaluation of current observing systems supporting the WMO Focal Point on Environmental Sustainability of Observations	Mr Jeff Anderson et al.	Canada
127	P	Enhance the link between private and public sectors to implement the role of the private sector in data provision	Dr Hamza Mohamed Hamza	Egypt
128	P	Capacity development of the Hydrometeorological Service of the Republic of Uzbekistan by using national and international funds	Dr Bakhriddin Nishonov	Uzbekistan
129	P	Equipping the weather stations of the meteorological network of the National Institute of Meteorology and Hydrology with an electronic psychrometer Meteo200 - challenges and solutions	Mr Orlin Gueorguiev et al.	Bulgaria
130	P	Supply and risks related to the exploitation of groundwater in the coastal city of Pointe-Noire, Republic of Congo	Dr Jean Bienvu DINGA et al.	Congo
131	P	Celebrating the 25th Year of the Southern Hemisphere Additional Ozonesondes (SHADOZ) Network	Dr Ryan M Stauffer et al.	United States of America
132	P	Metrology in Meteorology in Colombia	Mr Carlos Felipe Macias Hernandez et al.	Colombia

**Topic 6: Advancing Measurements in support of WIGOS vision 2040**

<b>No.</b>	<b>O/P</b>	<b>Title</b>	<b>Author</b>	<b>Country</b>
133	O	The importance of frequency management for meteorological observation	Mr Eric ALLAIX	France
134	O	Transitioning to modern measurements	Mr Andrew Harper et al.	New Zealand
135	O	New innovations to reduce environmental footprint of upper-air soundings	Mr Mika Hemming et al.	Finland
136	O	Specifying, designing and implementing a global surface reference network - first steps for the GSRN	Dr Tilman Holfelder et al.	Germany
137	O	Using Wigos tools to monitor and improve quality on local observing networks	Mrs Martina Suaya et al.	Argentina
138	O	Status and impact of radiosonde and surface observing systems	Mr Bruce Ingleby	United Kingdom of Great Britain and Northern Ireland
139	O	WMO Leadership on Environmental Sustainability of Observations in the Context of GBON Implementation	Ms Shannon Kaya et al.	Canada
140	O	WIGOS Metadata Representation (WMDR) revisited	Dr Jörg Klausen et al.	Switzerland
141	O	Towards Provenance metadata for METNorway datasets	Ms Nina E Larsgård et al.	Norway
142	O	Extending the range of wireless communications to weather phenomena using LORAWAN technology	Ms Francilly Lardin SAMBA	Congo
143	O	Assessing the role and potential benefits of weather-sensing Uncrewed Aircraft Systems through the WMO UAS Demonstration Campaign	Dr James Pinto et al.	United States of America
144	O	Tiered networks	Dr Peter Thorne et al.	Ireland
145	O	Regional WIGOS Center of Casablanca: what role to play in enhancing performance of observing networks in Africa	Dr RABIA MERROUCHI	Morocco
146	O	An essential update of WMO-No. 8 for the best practices of automated precipitation measurement	Dr Samuel Buisan et al.	Spain
147	O	Environmentally sustainable instrumentation in automated meteorological sensor networks	Mr Darren Lyth	United Kingdom of Great Britain and Northern Ireland
148	P	Unified AWS Data Collection, Integration and Processing Systems: a new approach to collect data from national and third-party observing networks	Mr Chemseddine EL GUERRAI et al.	Morocco
149	P	Integration of data from partner and third-party observing networks: opportunities and challenges	Dr RABIA MERROUCHI	Morocco
150	P	The status and quality of aircraft observations	Mr Bruce Ingleby et al.	United Kingdom of Great Britain and Northern Ireland
151	P	Experience with Public –Private –Engagement. Case study: Zimbabwe Meteorological Services Department (ZMSD).	Mr Webster Magwaro	Zimbabwe
152	P	Data exchange between global & regional centres and the NMHSs through the SWFP-West Africa.	Mr Sadibou BA	Senegal

153	P	Standardization of metadata in Peru under the approach of the Integrated Global Observing System (WIGOS)	Mr Julio Lau et al.	Peru
154	P	On the operational use of 1-min rain data in Basque Meteorology Agency	Mr Santiago Gaztelumendi et al.	Spain
155	P	Times series databases for meteorology	Mr José Daniel Gómez de Segura et al.	Spain