



WORLD
METEOROLOGICAL
ORGANIZATION
WEATHER CLIMATE WATER

WMO TECHNICAL CONFERENCE ON
METEOROLOGICAL AND ENVIRONMENTAL
INSTRUMENTS AND METHODS OF OBSERVATION
(TECO-2024)

FINAL PROGRAMME

(21 September 2024)

The WMO Technical Conference on Meteorological and Environmental Instruments and Methods of Observation (TECO-2024)

**Vienna, Austria
23-26 September 2024**

**Theme: *"Measurements and new technologies for WMO
priority initiatives"***

MONDAY, 23 SEPTEMBER 2024			
08:00–09:00	Registration		WMO Secretariat
09:00–09:30	Opening Ceremony		
TOPIC 1: NEW MEASUREMENT TECHNOLOGIES AND INNOVATIVE INTEGRATED APPROACHES			
Session: 09:30-12:30			
Chair: Dr Jane Warne			
Time	Paper No	Title of presentations	Speaker
09:30–09:45	O_1(01)	Multi-magnification networks for visibility estimation	Mr Nicola Santacroce
09:45–10:00	O_1(02)	Cosmic rays neutron sensing is a mature technology for snow water equivalent measurement	Dr Luca Stevanato
10:00–10:15	O_1(03)	Strategy and technology for de-icing treatment on roads and runways during winter precipitation	Dr Arkady Koldaev
10:15–10:30	O_1(04)	THERMACERN: A new method for precipitation analysis from Thies CLIMA	Dr Christoph Peper
10:30–11:00	COFFEE / TEA BREAK		
11:00–11:15	O_1(05)	AI improvement of irradiance measurements	Dr Marc Korevaar
11:15–11:30	O_1(06)	Overview of the 2024 WMO UAS Demonstration Campaign	Dr James O. Pinto
11:30–11:45	O_1(07)	Exploitation of webcam images for coastal applications	Ms Nerea Garmendia García
11:45–12:00	O_1(08)	The Yucatan HF radar network as a pathfinder for Caribbean-wide operations	Dr Scott Glenn
12:00–12:30	1-min Presentations of Topic 1 Posters (1 slide for each poster)		
12:30–14:00	LUNCH BREAK		

TOPIC 1: NEW MEASUREMENT TECHNOLOGIES AND INNOVATIVE INTEGRATED APPROACHES			
Session: 14:00-15:45			
Chair: Dr Junhong Wang			
14:00-14:15	O_1(09)	Mode-S: the benefits and challenges of high-density aircraft observations	Mr Bruce Ingleby
14:15-14:30	O_1(10)	Cost-effective, high-accuracy routine atmospheric profiling with wxUAS	Dr Ben Pickering
14:30-14:45	O_1(11)	Mapping horizontal wind speed using a single Doppler wind lidar scanning horizontally: a test case over Paris	Dr Clément Toupoint
14:45-15:00	O_1(12)	A situ profiling techniques that can provide cost-effective upper-air measurements Round-trip Drifting Sounding System (RDSS) in China	Mr Qiyun Guo
15:00-15:15	O_1(13)	Enhancing precipitation particle observations: The development and application of the balloon-borne and ground-based rainscope	Dr Kenji Suzuki
15:15-15:30	O_1(14)	WindBorne global sounding balloon observations	Mr Todd Hutchinson
15:30-15:45	O_1(15)	Machine learning methodology for remote calibration and anomaly detection in collaborative sensor fusion networks	Mr Amul Batra
15:45-16:15	COFFEE / TEA BREAK		
16:15-17:30	PANEL DISCUSSION SESSION 1: Trends and innovations in measurement technologies		

TUESDAY, 24 SEPTEMBER 2024			
TOPIC 2: ENVIRONMENTAL SUSTAINABILITY OF OBSERVING SYSTEMS			
Session: 09:00-10:30			
Chair: Ms Shannon Kaya			
Time	Paper No	Title of presentations	Speaker
09:00-09:15	O_2(01)	Driving a paradigm shift: key outcomes from the WMO initiative to advance the environmental sustainability of observing systems and methods	Dr Michael Earle
09:15-09:30	O_2(02)	A novel method of evaluating the environmental impact of radiosondes	Mr Johannes Frielingsdorf
09:30-09:45	O_2(03)	An Investigation into the safety of descending radiosondes	Dr Edmund K Stone
09:45-10:00	O_2(04)	Development and testing of an ultralight reusable glidersonde	Mr Yohan Hadji
10:00-10:15	O_2(05)	Two examples of the use environmentally-friendly sensors by Météo-France	Ms Beatrice Vincendon

10:15–10:30	O_2(06)	A truly sustainable and comprehensive solution for the Global Basic Observing Network	Mr Timo Siirtola
10:30–11:00	COFFEE / TEA BREAK, POSTER VIEWING, EXHIBITION VISIT		
TOPIC 3: CHARACTERIZATION AND TESTING OF INSTRUMENTS AND METHODS			
Session: 11:00-12:45 Chair: Dr Yves-Alain Roulet			
Time	Paper No	Title of presentations	Speaker
11:00–11:15	O_3(01)	Multi-year analysis of All-In-One meteorological observing instruments for scientific research use	Dr Bradley Illston
11:15–11:30	O_3(02)	Intercomparison of radiation shields in polar climate. COAT Project	Dr Carmen Garcia Izquierdo
11:30–11:45	O_3(03)	Impact of thermometer diameter on observations of air temperature	Ms Laura Bevilacqua
11:45–12:00	O_3(04)	Environmental influences on field measurement of temperature	Dr Jane Warne
12:00–12:15	O_3(05)	Installation and operation of ultrasonic anemometers in JMA	Mr Takashi Hamagami
12:15–12:45	1-min Presentations of Topics 2, 3 and 4 Posters (1 slide for each poster)		
12:45–14:00	LUNCH BREAK, EXHIBITION VISIT		
Session: 14:00-15:00 Chair: Dr Daniel Michelson			
14:00–14:15	O_3(06)	Improving the cloud cover estimation using wide-field of view imagers compared to narrow field instruments	Mr Mehdi Ben Slama
14:15–14:30	O_3(07)	Time constant of a newly released air temperature sensor and its implications	Dr Dirk V. Baker
14:30–14:45	O_3(08)	Inter-comparison of rainfall estimates from two optical rain gauge models	Dr Jacky TK Lau
14:45–15:00	O_3(09)	Development of quantitative precipitation estimation (QPE) relations for dual-polarization radars based on raindrop size distribution measurements in Metro Manila, Philippines	Mr Marco Polo Ibanez
15:00–15:30	POSTER SESSION FOR TOPICS 1, 2 & 3		
15:30–16:00	COFFEE / TEA BREAK, POSTER VIEWING, EXHIBITION VISIT		
16:00–17:15	PANEL DISCUSSION SESSION 2: Capacity development and challenges in maintaining measurement networks		

WEDNESDAY, 25 SEPTEMBER 2024**TOPIC 4: TRACEABILITY OF MEASUREMENTS TO RECOGNIZED STANDARDS****Session: 09:00-10:15****Chair: Mr Drago Groselj**

Time	Paper No	Title of presentations	Speaker
09:00-09:15	O_4(01)	Introduction to the development of ISO test method standards of radiosonde temperature, humidity, and solar radiation correction	Dr Yong-Gyoo Kim
09:15-09:30	O_4(02)	Experimental study on measurement uncertainty of air temperature observation	Dr Jianxia Guo
09:30-09:45	O_4(03)	Intercomparison and traceability of visibility measurements	Dr Jessica Strickland
09:45-10:00	O_4(04)	Field trials of trace-gas analyzers designed for eddy covariance flux measurements of methane (CH ₄) and nitrous oxide (N ₂ O)	Mr Scott Cornelsen
10:00-10:15	O_4(05)	Measurement uncertainty of eddy covariance based carbon budget	Dr Nicola Arriga
10:15-10:45	COFFEE / TEA BREAK, POSTER VIEWING, EXHIBITION VISIT		
10:15-10:45	Meet with SC-MINT Expert Teams Chairs Informal discussions for persons interested in contributing to the works of WMO SC-MINT Expert Teams		

TOPIC 5: QUALITY ASSURANCE AND MAINTENANCE OF THE OBSERVING SYSTEMS**Session: 10:45-12:30****Chair: Mr Andrew Harper**

Time	Paper No	Title of presentations	Speaker
10:45-11:00	O_5(01)	Siting Classification 2024: Guidance on implementation of the siting classification and future work on its optimization	Dr Mareile A. Wolff
11:00-11:15	O_5(02)	Maintenance and quality assurance of New York State Mesonet	Dr Junhong Wang
11:15-11:30	O_5(03)	Sustaining a global observing network – the International Monitoring System perspective	Dr Lucie Pautet
11:30-11:45	O_5(04)	MET Malaysia's meteorological mobile maintenance and site calibration	Mr Mohd Azman Abd Ghafar
11:45-12:30	1-min Presentations of Topics 5 & 6 Posters (1 slide for each poster)		
12:30-14:00	LUNCH BREAK, EXHIBITION VISIT		

Session: 14:00-14:45			
Chair: Ms Nan Zhang			
14:00-14:15	O_5(05)	Research and Application of Weather Radar Calibration Methods	Dr Yubao Chen
14:15-14:30	O_5(06)	What peculiar situations can we find on the Basque coast?	Ms June Madariaga Navarro
14:30-14:45	O_5(07)	Impact of assimilating Mode-S observations into the Met Office global deterministic NWP model on forecast accuracy, from a European and global network	Dr Elliott Warren
14:45-15:15	POSTER SESSION FOR TOPICS 4, 5 & 6		
15:15-15:45	COFFEE / TEA BREAK, EXHIBITION VISIT		
15:45-17:00	PANEL DISCUSSION SESSION 3: Evolving measurement requirements for WMO priorities (EW4All, G3W, GBON, RBON and WIGOS Vision*)		
17:00-18:00	DRINK RECEPTION		

THURSDAY, 26 SEPTEMBER 2024			
TOPIC 6: CAPACITY DEVELOPMENT FOR SUSTAINABLE AND QUALITY MEASUREMENTS			
Session: 09:00-10:15			
Chair: Mr Humphrey Geoffrey Angulu			
Time	Paper No	Title of presentations	Speaker
09:00-09:15	O_6(01)	The benefits of a standardised technical specification for Automatic Weather Station design and installation	Mr David Hiscock
09:15-09:30	O_6(02)	Field evaluation 3D-Printed Automatic Weather Stations (3D-PAWS) in Türkiye	Mr Engin Oztürk
09:30-09:45	O_6(03)	Development and application of microclimate observation network in Hong Kong	Dr Dick Ho-ming Leung
09:45-10:00	O_6(04)	Sustainable and quality measurements for answering AFOLU emission challenges regarding NDCs in Colombia	Dr Edwin Cristancho-Pinilla
10:00-10:15	O_6(05)	Provision of AWS training - lessons learnt	Mr Andrew Harper
10:15-10:45	COFFEE / TEA BREAK, POSTER VIEWING		

Session: 10:45-12:15			
Chair: Dr Elian Wolfram			
10:45-11:00	O_6(06)	Standardization of first-mile data collection in China	Dr Dongdong Chen
11:00-11:15	O_6(07)	Capacity building challenge in a fast climate & technology changing environment for developing countries	Ms Esther Nakiwala Kigongo
11:15-11:30	O_6(08)	SINARAME, a brief review of the development history of the Argentinian weather radar network	Mr Federico Pablo Renolfi
11:30-11:45	O_6(09)	Integrated low-cost radar sensor for snow height measurement: Prototype and complete winter season measurements	Mr Víctor Herráiz-López
11:45-12:00	O_6(10)	Commissioning of ten numbers of X-Band SSPA based Doppler weather radars in Himalayan Region of India	Ms Arpita Rastogi
12:00-12:15	O_6(11)	A comparison of daily rainfall measurements at Irish stations: Pluvio weighing rain gauge versus manual gauge	Mr Tony O'Leary et al.
12:15-13:45	LUNCH BREAK, EXHIBITION VIEWING		
Session: 13:45-14:45			
Chair: Dr Mareile A. Wolff			
13:45-14:00	O_6(12)	WMO Guide to Operational Weather Radar Best Practices – first edition	Dr Daniel Michelson
14:00-14:15	O_6(13)	Specifications for solid-state transmitter weather radars	Mr Pekka Utela
14:15-14:30	O_6(14)	Advancing methods for monitoring thermal balance of sea ice during the North Pole - 41 expedition 2022/2024 based on Lagrangian profiling buoys	Dr Vasily Smolyanitsky
14:30-14:45	O_6(15)	Observation comparison and mutual verification of the integrated air-surface system for Fengyun meteorological satellite	Dr Peng Zhang
14:45-15:00	CLOSING OF TECO-2024		

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EW4All: Early Warnings for All

G3W: Global Greenhouse Gas Watch

GBON: Global Basic Observing Network

INFCOM: Commission for Observation, Infrastructure and Information Systems

RBON: Regional Basic Observing Network

SC-MINT: INFCOM/Standing Committee on Measurements, Instrumentation and Traceability

WIGOS: WMO Integrated Global Observing System

POSTER SESSIONS

TOPIC 1: NEW MEASUREMENT TECHNOLOGIES AND INNOVATIVE INTEGRATED APPROACHES			
Poster Board No	Poster No	Title	Author (s)
1	P_1(01)	A joint initiative between WMO and HMEI on standardization of data collection	Mr Rémy Giraud
2	P_1(02)	SSPA dual-polarization weather radar maintenance	Ms Aina Otsubo et al.
3	P_1(03)	Heavy rainfall events of the last 20+ years in Germany: A web-based open information tool	Dr Thomas Einfalt et al.
4	P_1(04)	SwissMetNet migrating to cloud technologies	Dr Christian Félix et al.
5	P_1(05)	Development of all-weather UAV (Marshall) and initial observations	Dr Kazuhiro Yoshimi et al.
6	P_1(06)	Develop an AI utility to detect cloud types and meteorological visibility in real-time	Mr Hamza Hamza Mohamed
7	P_1(07)	Ground-based lidar operational and research activities at KNMI	Dr Knoop Steven et al.
8	P_1(08)	Development of small uncrewed surface observation vehicles to contribute to typhoon monitoring, forecasting, and modification in the tropical Northwest Pacific Ocean	Dr Shuichi Mori et al.
9	P_1(09)	Weather radar rapid and refined detection technology	Mr Haifeng Yu et al.
10	P_1(10)	Correction, based upon the air density, of the Density Size Distribution (DSD) estimated by radar precipitation sensor to improve liquid precipitation measurement	Mr J. Ismael Sanambrosio et al.
11	P_1(11)	Introduction of standard meteorological observatory in the Korea Meteorological Administration	Mr Ki Hoon Kim
12	P_1(12)	Flight altitude control technique using latex weather balloons aimed for advancing upper-air observations	Dr Kensaku Shimizu et al.
13	P_1(13)	Assessment of stratospheric dropsonde data through NWP model comparisons	Mr Matthew Fry
14	P_1(14)	Enhancing radiosonde temperature measurements through advanced sensor coatings	Mr Sencer Aydin et al.
15	P_1(15)	LEELA lightning detection and VLF recording	Dr Edmund K Stone et al.
16	P_1(16)	Extracting key indicators of snow and horizontal visibility from webcam images	Dr Pierre Lepetit et al.
17	P_1(17)	New design of radiation shield (RS) - comparison	Mr Juraj Schwarz

18	P_1(18)	A Novel camera-based approach to increase the quality, objectivity and efficiency of aeronautical meteorological observations	Mr Lukas Ivica
19	P_1(19)	Advancements in air temperature measurement technologies: evaluating and comparing the new SMarT CELLino solar screen	Dr Adriano Fedi et al.
20	P_1(20)	New generation of weather radar image, under control with ground measurements	Ms Amélie Thevenet-Leprevost
21	P_1(21)	Validation and benchmark of a novel low-cost measurement system of direct and diffuse irradiance at six sites worldwide	Dr Blum Niklas et al.
22	P_1(22)	Presentation of the French national weather service new automatic weather station dedicated to aeronautical platforms	Mr Leroy Fabrice
23	P_1(23)	Compact Raspberry Pi-Based Automatic Rain Gauge Data Logger for Supporting Rain Monitoring in Indonesia	Mr Simon Baharja Siagian et al.
24	P_1(24)	The Importance of data in emergency management	Mr Kerry Caslow Christian Abouzeid et al.
25	P_1(26)	Common data communication protocol	Mr Yusuf Salih Eroğlu et al.
26	P_1(27)	Smart data logging system	Mr Yusuf Salih Eroğlu et al.
27	P_1(28)	Communicating integrated early warning weather information	Mr Jon Tarleton
28	P_1(29)	CLODES®, AI-based system for overview of current sky condition, in terms of clouds classification and coverage	Dr Claudio Fausto Petrachi et al.
29	P_1(30)	Storm surge modelling in the Eastern Indonesia waters	Mr Khafid Rizki Pratama
30	P_1(31)	Comparison of digital and analogue instruments	Mr Hamudi Sikoya
31	P_1(32)	Digitization of mercury barometers and verification process of digital barometers of synoptic stations in Senegal	Mr Ibrahima Diallo et al.
32	P_1(33)	Monitoring forests in remote areas by IoT based measuring systems: the RemoTrees project	Dr Luca Belelli Marchesini et al.
33	P_1(34)	Dropsondes from the Stratosphere: Targeted observations over remote regions using stratospheric platforms	Mr Paul Stevens et al.
34	P_1(35)	FENGYUN Meteorological Satellite: An innovation platform for Earth observation	Dr Dongyan Mao et al.
35	P_1(36)	Eddy covariance flux system on a buoy: recent advancements in gas analyzer technology	Dr Ivan Bogoev et al.
36	P_1(37)	Cloud classification from global horizontal irradiance data using a ML model in Buenos Aires, Argentina	Ms Anabela Lusi et al.

37	P_1(38)	Innovation in met-ocean observing to address upcoming blue economy challenges	Mr Chad Whelan et al.
38	P_1(39)	Rainfall-runoff modelling using SCS-CN under HEC-HMS and GIS techniques in Matadi catchment of Congo River, Democratic Republic of Congo	Dr Kabadi Papy et al.
39	P_1(40)	Sea surface salinity drifting buoys based on SVT technology	Dr Eugene Lunev et al.
40	P_1(41)	Monitoring of water level and the issue with water discharges	Mr Vasko Stojov
41	P_1(42)	Using AI and the Internet of Things to create a global network for environmental monitoring	Mr Ahmed Sharafaddin
42	P_1(43)	Experiences of IoT measurement technology in meteorological and marine applications	Mr Lasse Latva et al.
43	P_1(45)	LidarCUBE - an advanced compact lidar for routine operations	Mr Johannes Frielingsdorf et al.
44	P_1(46)	Organizational and methodological issues of operation of modern hydrometric measurement equipment in the Hydrometeorological Service of Ukraine	Dr Viacheslav Manukalo et al.

TOPIC 2: ENVIRONMENTAL SUSTAINABILITY

Poster Board No	Poster No	Title	Author(s)
45	P_2(01)	The "Green Reconstruction" approaches as a basis of the restoration of the hydrometeorological observations system of Ukraine	Dr Viacheslav Manukalo et al.
46	P_2(02)	Sustainability and availability: democratisation of radar technology	Mr Michal Najman et al.
47	P_2(03)	Sustainable weather and environmental observation systems	Mr Wathik Chahabane Youssouf
48	P_2(04)	An Investigation into the safety of descending radiosondes	Mr David Edwards et al.

TOPIC 3: CHARACTERIZATION AND TESTING OF INSTRUMENTS AND METHODS

Poster Board No	Poster No	Title	Author(s)
49	P_3(01)	Design for the small-sized air-circulating chamber for thermometer comparison applicable to the liquid bath	Mr Sunghun Kim et al.
50	P_3(02)	Optimizing meteorological data collection with digital climate stations: A comprehensive analysis	Mr Gde Krisna Lingga Aditama et al.
51	P_3(03)	Comparative analysis of temperature and humidity sensors in unusual environmental conditions	Mr Hendri Satria WD et al.
52	P_3(04)	A comparison of daily rainfall measurements at Irish stations: Pluvio weighing rain gauge versus manual gauge	Mr Tony O'Leary et al.
53	P_3(05)	Assessing measurement uncertainty and response time of RS41 humidity sensors using an upper air simulator	Mr Young-Suk Lee et al.
54	P_3(06)	Further steps towards an open-source RS41 data processing toolchain	Mr Johannes Frielingsdorf et al.
55	P_3(07)	Intercomparison of thermometers in a Stevenson screen under polar climate	Dr Carmen Garcia Izquierdo et al.
56	P_3(08)	Field trials of trace-gas analyzers designed for eddy covariance flux measurements of methane (CH ₄) and nitrous oxide (N ₂ O)	Mr Scott Cornelsen et al.
57	P_3(09)	Influence of user errors on ADCP measurement outcome	Mr Tomas Boraros et al.
58	P_3(10)	Instrumentation performance and preliminary results for running SNOWPACK model	Dr Samuel Buisan et al.
59	P_3(11)	Double scattering non-catchment IR precipitation sensor "Ray" for road de-icing operation	Dr Arkady Koldaev et al.
60	P_3(12)	Comparison of carbon dioxide emissions calculated by different methods for determining the biomass content in a waste incinerator	Mr Seung Hyun Jung et al.
61	P_3(13)	Towards wider usage of radiosonde descent data	Mr Bruce Ingleby
62	P_3(14)	Effects of environmental conditions on the CIMO WMO Class determination for OTT HydroMet precipitation sensors	Dr Johanna Spiegel-Pinzer
63	P_3(15)	An intercomparison of precipitation sensors to evaluate the uncertainty in precipitation type determination in Oslo	Mr Renaud Gaban et al.
64	P_3(16)	Dependence of surface air temperature measurement on thermometer's installation height	Mr Alberto Bottacin et al.
65	P_3(17)	Metrological validation of the 48.8 °C European extreme air temperature record	Dr Chiara Musacchio et al.
66	P_3(18)	The wind induced bias of the 2D Video Disdrometer	Dr Enrico Chinchella et al.

67	P_3(19)	improvement of relative humidity measurement in a meteorological observation network characterized by an extreme environment	Mr Aziz Mounir
68	P_3(20)	Comparative study of rain measurement by optical disdrometers and tipping-bucket rain gauges in Basque Country	Mr Santiago Gaztelumendi et al.
69	P_3(21)	Evaluation and inter-comparison of weighing gauge measurements in Basque Country.	Mr Santiago Gaztelumendi et al.
70	P_3(22)	Winter field test of the Lufft SHM31 laser snow depth sensor	Mr Darren Lyth

TOPIC 4: TRACEABILITY OF MEASUREMENTS TO RECOGNIZED STANDARDS

Poster Board No	Poster No	Title	Author(s)
71	P_4(01)	Participation of RIC Casablanca in ILC of pyranometers and pyrhemometers organized by "the European ESTI laboratory of the Joint Research Center (JRC)"	Mr Aziz Mounir
72	P_4(02)	Presentation of the new calibration procedure according to ISO9847:2023 for pyranometers according to the two indoor and outdoor calibration operating modes traceable through absolute cavity radiometer	Mr Aziz Mounir
73	P_4(03)	Laboratory calibration of disdrometers using a precision raindrop generator	Dr Enrico Chinchella et al.
74	P_4(04)	Evaluating the environmental effect on air temperature measurements from ground-based stations	Ms Natali Giselle Aranda et al.
75	P_4(05)	Arctic Metrology: case study for air temperature measurements at Ny-Ålesund, Svalbard	Dr Graziano Coppa et al.
76	P_4(06)	GSRN Pilot - Understanding uncertainties, developing data products and implementing a global surface reference network	Dr Tilman Holfelder et al.
77	P_4(07)	Enhancing calibration capacity in compact relative humidity calibrators	Dr Adam Krovina et al.
78	P_4(08)	Details of temperature measurement in the operational UK network	Mr Mike Molyneux
79	P_4(09)	SI-Traceable indoor calibration of pyranometers by comparison with a reference solar cell	Dr Jae-Keun Yoo et al.
80	P_4(10)	Adoption and implementation of ISO 17025 in Geolux hydrological laboratory	Dr Sanja Grubesa et al.
81	P_4(11)	Comparing measurements obtained with two KNMI precipitation gauge set-ups to a field reference designed according to the ISO/EN 13798:2010 standard	Mr Michael Quinlan
82	P_4(12)	Towards a next generation meteorological observing network for the Netherlands: first experiences from a managed change perspective	Mr Marijn de Haij et al.

83	P_4(13)	A global scientific effort to improve atmospheric air temperature measurements.	Dr Andrea Merlone et al.
84	P_4(14)	Standard development: ISO WD 28902-2023: Part 4: Particle backscatter lidar	Mr Holger Wille et al.
TOPIC 5: QUALITY ASSURANCE AND MAINTENANCE OF THE OBSERVING SYSTEMS			
Poster Board No	Poster No	Title	Author(s)
85	P_5(01)	Development of meteorological measurement standards: An introduction to the VDI-Standards	Dr Ge Cheng et al.
86	P_5(02)	Meteorological measurement standards: Overview of ISO/TC 146/SC 5 "Meteorology" Scope and Activity	Dr Ge Cheng et al.
87	P_5(03)	Introduction of Regional WIGOS Center (RWC) Tokyo initiatives	Mr Hagiya Satoshi et al.
88	P_5(04)	Installation, maintenance and quality control procedures of the network of automatic meteorological stations	Ms Martha Eugenia Pereira Molina et al.
89	P_5(05)	Use of machine learning methods for quality control and data restoration of metocean data	Dr Jose Araya
90	P_5(06)	The use of the Theodolite HD mobile application, orthophoto images and a digital relief model for the purpose of classifying the locations of meteorological stations for selected meteorological elements	Mr Karol Seják
91	P_5(07)	Implementation of spare part analysis using reliability, maintainability, and availability (RAM) metrics for automated weather observing system spare parts procurement in Indonesia	Mr Sugiarto Sugiarto et al.
92	P_5(08)	Challenges and best practices in spare parts and consumables management (A case study of Zimbabwe Meteorology Services Department)	Mr Travolta Anesu Zibani
93	P_5(09)	Automatic siting class of weather stations to assess the effects of heat sources and shadows in Norway	Dr Pierre-Marie Lefevre et al.
94	P_5(11)	KMA/NIMS Atmospheric Research Aircraft (NARA) observation system operation status and activities	Mr Sueng-Pil Jung et al.
95	P_5(12)	Automatic quality control of observational data at MET Norway	Dr Amélie Neuville et al.
96	P_5(13)	Measurement validation in automatic weather station	Mr Jorma Islander
97	P_5(14)	Good quality assurance and maintenance AWS database	Mr Abubakarr Jalloh
98	P_5(15)	The IoT technology for Moscow area early warning meteorological hazard system.	Dr Arkady Koldaev et al.
99	P_5(16)	Case study: Transition from conventional to automatic meteorological observing networks in Senegal; challenges and solutions	Mr Sadibou Ba et al.

100	P_5(17)	Site Selection for observing stations for operational sustainability	Mr İsmail Temir et al.
TOPIC 6: CAPACITY DEVELOPMENT FOR SUSTAINABLE AND QUALITY MEASUREMENTS			
Poster Board No	Poster No	Title	Author(s)
101	P_6(01)	The benefits of a standardised technical specification for automatic weather station design and installation	Mr David Hiscock
102	P_6(02)	SINARAME, a brief review of the development history of the Argentinian weather radar network	Mr Federico Pablo Renolfi et al.
103	P_6(03)	Ground-based remote sensing of atmosphere training course in the Latin America	Dr Elian Wolfram et al.
104	P_6(04)	Analytic platform development for design of cloud seeding	Mr Jung Hoon Lee et al.
105	P_6(06)	Presentation of the Guinea's meteorological observation network	Mr Souwala Dore
106	P_6(07)	The possibility to determine the object for visibility observation	Dr Amgalan Ganbat et al.
107	P_6(10)	Towards a single global standard for polar weather radar data representation with FM301 – CfRadial2	Mr Mark Curtis et al.
108	P_6(11)	Challenges in weather forecasting due to complex terrain and data scarcity in Nepal	Mr Chiranjibi Bhetuwal et al.
109	P_6(12)	Of the necessity to reintroduce weather radars in African countries	Dr Cheikh Abdoulat Diop
110	P_6(13)	Environmental instrument and methods of observation	Ms Setsoafia Elikem et al.
111	P_6(14)	Dynamics of the transport of materials in the Congo River basin to the Atlantic Ocean	Dr Jean Bienvenu Dinga et al.
112	P_6(15)	Enhancement of meteorological observation capabilities in Myanmar	Mr Wai Toe Aung
113	P_6(16)	Towards the updated vision for WIGOS and High-Level Guidance on the Evolution of Global Observing Systems	Ms Estelle Grueter et al.
114	P_6(17)	EUMETSAT's Commercial RO Data Service	Mr Georgios Potiriadis et al.
115	P_6(18)	EUMETSAT Advanced Retransmission Service Next Generation (EARS-NG)	Mr Georgios Potiriadis et al.
116	P_6(19)	The role of adequate climate observational network in supporting robust climate change adaptation and mitigation; a case study of Kenya	Mr Nixon Lang'at et al.
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