

3rd European Nowcasting Conference

24 – 26 April 2019, Headquarters of AEMET, Madrid, Spain

Wednesday, 24 April 2019

12:30 - 13:00 Registration

Session chair: *Luis Bañón*

13:00 - 13:10 **Welcome addresses**

José Antonio Fernández Monistrol

Director de Producción e Infraestructuras, AEMET – Agencia Estatal de Meteorología, Spain

13:10 - 13:25 **New phase of the EUMETNET programme with focus on Forecasting**

Manuel Palomares Calderón

Programmes Coordinator, EUMETNET – European Meteorological Services Network

Dick Blaauboer

Forecasting Capability Area Manager, EUMETNET

13:25 - 13:40 **World Weather Research Programme – importance of Nowcasting**

Estelle de Coning

Scientific Officer, WWRP, WMO – World Meteorological Organization

13:40 – 13:55 **Advancing the science of nowcasting and mesoscale numerical weather prediction at National Meteorological and Hydrological Services world-wide.**

Rita Roberts¹; P. Steinle²; Y.Wang³; E. de Coning⁴; L. Bach⁵; P.W. Li⁶; R. Albrencht⁷; V. Masson⁸; P. Salio⁹; D. Sills¹⁰; D. Turner¹¹

¹NCAR – *National Center for Atmospheric Research, United States*; ²BoM; ³ZAMG; ⁴WMO; ⁵DWD; ⁶HKO; ⁷U. of Sao Paolo; ⁸MeteoFrance; ⁹U. of Buenos Aires; ¹⁰ECCC; ¹¹NOAA

13:55 - 14:10 **The EUMETNET Nowcasting Project**

Franziska Schmid

Project Manager, ZAMG – Zentralanstalt für Meteorologie und Geodynamik, Austria

14:10 - 14:20 **Introduction to the ENC**

Ana Sanchez

International Relations Department, AEMET

OBSERVATION AS BASIS FOR NOWCASTING

Session chair: *Estelle de Coning*

14:20 - 14:35 **Passenger car data as a new source of real-time weather information for nowcasting, forecasting and road safety**

Hella Riede¹; J.W. Acevedo-Valencia¹; A. Bouras¹; Z. Paschalidi¹; M. Hellweg²; K. Helmert¹; R. Hagedorn¹; R. Potthast¹; T. Krantzschnig¹; J. Nachtigall³

¹DWD - *Deutscher Wetterdienst, Germany*; ²KIT – *Karlsruhe Institute of Technology, Germany*; ³Audi AG, Germany

14:35 - 14:50 **Identification of the life cycle of a Bow echo associated with Tornado – A diagnostic study through Doppler Weather Radar**

Sayantika Mukherjee

Amity University Kolkata, India

14:50 - 15:35 **Overview of the posters:**, P1, P2, P3, P4, P5, P6, P7, P8, P9, P10, P11, P12, P13, P14, P15, P29

The poster presenters

15:35 - 16:15 **Coffe break & Poster viewing**

Session chair: Estelle de Coning

- 16:15 – 16:30 **EO-ALERT – Extreme Weather Scenario: Towards Convective Storm Nowcasting Via On-Board Satellite Processing**
Aniello Fiengo¹; Cecilia Marcos²; Juan I. Bravo²; Murray Kerr²
¹Deimos Space SLU; ²AEMET
- 16:30 – 16:45 **Wind gusts registered in Zaragoza airport associated to supercellular convection on 1st July 2018 and its spatial variability**
Ismael Sanambrosio; S. T. Buisan; T.J. Gutierrez
AEMET, Spain
- 16:45 – 17:00 **Applications of the WMO Solid Precipitation Intercomparison Experiment (WMO-SPICE) results for nowcasting activities**
S. Buisan¹; Y.A. Roulet²; C.D. Smith³; J. Kochendorfer⁴; J.L. Collado¹; Mareile Wolff⁵; T. Laine⁶; M. E. Earle³; R. Rasmussen⁷; R. Nitu⁸
¹AEMET, Spain; ²Meteoswiss; ³ECCE - Environment and CC, Canada; ⁴NOAA; ⁵NMI; ⁶FMI; ⁷NCAR; ⁸WMO
- 17:00 – 17:15 **The Meteosat Third Generation satellite mission and its future contribution to nowcasting**
Stephan Bojinski; Vesa Nietosvaara; Jochen Grandell
EUMETSAT - European Organization for the Exploitation of Meteorological Satellites
- 17:15 – 17:30 **A new approach for near-real-time monitoring of atmospheric stability, atmospheric water vapor and liquid water**
Ulrich Löhnert; Maria Toporov
University of Cologne, Germany
- 17:30 – 17:55 **Discussion on Observation as basis for Nowcasting**
(Moderator: Estelle de Coning)
- 17:55 – 19:30 **Icebreaker**

Thursday, 25 April 2019

SEAMLESS PREDICTION WITH SPECIAL FOCUS ON DATA ASSIMILATION

Session chair: Yong Wang

- 08:30 – 08:45 **NowcRadiation: seamless-nowcasting solar radiation using satellite and high resolution numerical model output**
Mauri Martínez-Sánchez; Alfons Callado
AEMET, Spain
- 08:45 – 09:00 **Seamless approach for precipitations within the 0-3 hours forecast-interval**
Jean-Marc Moisselin, Philippe Cau; Céline Jauffret
Météo-France, France
- 09:00 – 09:15 **Impact of Bayesian weighting in a probabilistic nowcasting from INCA and C-LAEF**
Aitor Atencia; Alexander Kann; Yong Wang; Clemens Wastl
ZAMG, Austria
- 09:15 – 09:30 **Seamless Nowcasting System Development at the Finnish Meteorological Institute**
Jaakko Nuottokari; R. Gregow; H. Hohti; J. Kotro; I. Karjalainen; J. Ylhäisi; L. Hieta; M. Partio; J. Jarjalainen
FMI – Finnish Meteorological Institute, Finland
- 09:30 – 09:45 **Development of a new seamless integrated forecasting system (SINFONY) at DWD**
K. Wapler; Markus Schultze; U. Blahak; M. Paulat; R. Potthast; A. Seifert; M. Wener; L. Bach; E. Bauernschubert; R. Feger; K. Feige; M. Hoff; M. Junk; A. Lozar; L. Neef; R. Posada; M. Rempel; M. Schultze; S. Ulbrich; C. Welzbacher
DWD, Germany
- 09:45 – 10:10 **Discussion on Seamless Prediction with special focus on data assimilation**
(Moderator: Yong Wang)
- 10:10 – 10:50 **Overview of the posters: P16, P17, P18, P19, P20, P21, P22, P23, P24, P25, P26, P27, P28, P30**
Poster presenters
- 10:50 – 11:30 **Coffe break & Poster viewing**

NOWCASTING THECNQUES, SYSTEMS AND PRODUCTS

Session chair: Matteo Buzzi

- 11:30 – 11:45 **Nowcasting mountain waves turbulence on Zagros area by using satellite images and NWP model**
Mehran Farjad¹, Ahad Vazifeh², Parisa Izadi¹
¹Meteorological Organization, I.R of Iran; ²Geophysics Institute of Tehran University, I.R of Iran
- 11:45 – 12:00 **The Nowcasting SAF Products and Services: Recent Improvements in the New SW Packages PPS v2018 and GEO v2018 and Future Plans**
Pilar Rípodas¹; X. Calbet¹; J.LL. Lliso¹; J.A.Lahuerta¹; M.A. Martínez¹; J. García-Pereda¹; J.M. Gallardo¹; H. Le Gléau²; G. Kerdraon²; S. Péré²; J.M. Moisselin²; F. Autones²; M. Claudon²; A. Thoss³; S. Hörnquist³; A. Dybbroe³; R. Scheirer³; N. Hakansson³; A. Jann⁴; A. Wirth⁴; A. Diamandi⁵; O. Nicola⁵; O. Alonso⁶; L. Fernández⁶
¹AEMET, Spain; ²Météo-France; ³SMHI; ⁴ZAMG; ⁵NMA; ⁶GMV
- 12:00 – 12:15 **Convective Storm Nowcasting – Capabilities of Remote Sensing in Central Europe**
Michaela Valachová; Patrik Bená?ek; Hana Kyznarová
Czech Hydrometeorological Institute, Czech Republic
- 12:15 – 12:30 **Some algorithmic developments on HARMONIE-AROME for NWP-NWC**
Carlos Geijo
AEMET, Spain
- 12:30 – 12:45 **Nowcasting of thunderstorm severity with Artificial Neural Networks in the Alpine Region**
Ulrich Hamann¹; J. Zeder¹; L. Beusch²; L. Clementi¹; L. Foresti¹; A. Hering¹; D. Nerini^{1,2}; L. Nisi¹; M. Sassi¹; U Germann¹
¹MeteoSwiss, Switzerland; ²Institute for Atmospheric and Climate Science, ETH, Zurich
- 12:45 – 13:45 **Lunch break**

Session chair: Kathrin Wapler

- 13:45 – 14:00 **Lightning-jumps in convective cells tracked by radar as a nowcasting tool in complex orography**
Alessandro Hering; Luca Nisi; Ulrich Hamann; Urs Germann
MeteoSwiss, Switzerland
- 14:00 – 14:15 **Towards A Nowcasting System for Meteorological Services Singapore**
Erick Becker; Xiangming Sun
CCRS - Centre for Climate Research Singapore, Republic of Singapore
- 14:15 – 14:30 **Blended probabilistic nowcasting with the IMPROVER post-processing system**
Caroline Sandford; Stephen Mosseley
Met Office, UK
- 14:30 – 14:45 **Nowcasting wind using machine learning: from the stations to the grid**
Matteo Buzzi; Matteo Guidicelli; Mark Liniger
MeteoSwiss, Switzerland
- 14:45 – 15:00 **Generation of an Object-based Nowcasting Ensemble**
Robert Feger; Manuel Werner; Rafael Posada; Kathrin Wapler; Ulrich Blahak
DWD, Germany
- 15:00 - 15:15 **VISOR: Real time observations visualizer**
Cecilia Marcos; M. Gomez; P. Aguayo; M.T. García; C. Jiménez; C. Perea; J. Riesco; A. Roa; J.I. San Ambrosio
AEMET, Spain
- 15:15 – 15:45 **Coffe break & Poster viewing**

Session chair: Kathrin Wapler

- 15:45 – 16:00 **Nowcasting lightning using weather radar and a dynamically update ice mass estimator**
Evan Ruzanski¹; V. Chandrasekar²
Vaisala USA¹; Colorado State University USA²
- 16:00 – 16:15 **Assimilating remote sensing data and its impact in LAPS predictability**
Petros Katsafados¹; C. Spyrou¹; G. Varlas²; M. Anagnostou³; J. Kalogiros³; A. Papadopoulos²
¹University of Athens, Greece; ²HCMR, Greece; ³IMBRIW, Greece
- 16:15 – 16:30 **Improved motion vectors in rainfall nowcasting using Burgers' equation**
GyuWon Lee; Soorok Ryu
CARE – Center for Atmospheric Remote Sensing, R. of Korea
- 16:30 – 16:45 **iSHAI and PGE00: key tools for preconvective monitoring and for the preparation of the MTG era**
Miguel Angel Martinez; Xavier Calbet
AEMET, Spain
- 16:45 – 17:15 **Discussion on Nowcasting Techniques, systems and products**
(Moderator: Kathrin Wapler and Matteo Buzzi)

Friday, 26 April 2019

VERIFICATIONS AND SOCIETAL IMPACTS & APPLICATIONS AND USERS ASPECTS

Session chair: *Alexander Kann*

- 09:00 – 09:15 **Use of the radar data for wintery weather warnings at Deutscher Wetterdienst**
Tim Böhme; Jörg Steinert
DWD, Germany
- 09:15 – 09:30 **Aviation operational nowcasting systems**
Tatiana Bazlova; Nikolay Bocharnikov; Alexander Solonin
IRM - Institute of Radar Meteorology, Russia
- 09:30 – 09:45 **European Composite of Convection Nowcasting for SESAR Deployment**
Sandra Turner; Jean-Marc Moisselin; Stéphanie Desbios
Météo-France, France
- 09:45 – 10:00 **Precipitation nowcast scenarios for hydrology**
Stephen Moseley; Caroline Sandford; Nigel Roberts
Met Office, UK
- 10:00 – 10:15 **Experiences in using INCA precipitation nowcasting for Urban Flood Nowcasting**
Frédéric Jordan¹; Matteo Buzzi²; Lorenza Gianoni²; Raphael Mutzner¹
¹*Hydrique Ingénierus, Switzerland*; ²*MeteoSwiss*
- 10:15 – 10:30 **Application of an integrated hydrological nowcasting chain on Liguria Region**
Maria Laura Poletti¹; F. Silvestro¹; S. Davolio²; F. Pignone¹; N. Rebora¹
¹*CIMA Research Foundation, Italy*; ²*Institute of Atmospheric Sciences and Climate, ISAC-CNR, Italy*
- 10:30 – 11:00 **Coffe break & Poster viewing**
- Session chair: *Franziska Schmid*
- 11:00 – 11:15 **Use of conditional probability for short-range visibility forecasting at Zagreb Airport**
Marko Zoldos; Jadran Jurkovic
Croatia Control Ltd., Croatia
- 11:15 – 11:30 **Using lightning data for nowcasting : performance & evaluation**
Stephane Schmitt
Meteorage, France
- 11:30 – 11:45 **Nowcasting Decalogue: ten essential ideas**
Luis Bañón
AEMET, Spain
- 11:45 – 12:00 **Catastrophic floods on October 9th, 2018 in Mallorca Island**
Gabriela Cuevas; Ramón Pascual; Alejandro Roa; David Alfonso Esteban
AEMET, Spain
- 12:00 – 12:15 **MeteoVIAS: Web Application for winter road weather forecasting**
Pedro García; Nieves Garrido; Ignacio Villarino; Inmaculada Abia
AEMET, Spain
- 12:15 – 12:55 **Discussion on **Verifications and societal impacts** & **Applications and users aspects****
(Moderator: *Alexander Kann & Franziska Schmid*)
- 12:55 – 13:15 **Closing session**

Posters:

- P1. Observational Analysis Environmental Factors of Associated with Heavy Snowfall in Yeongdong area, Korea**
Hae-Min Kim; Chag-Geun Park; Baek-Jo Kim; So-Ra In
National Institute of Meteorological Sciences, KMA, Korea
- P2. Sensitivity Analysis on Characteristics of Snowfall to the Meteorological Conditions in the Yeongdong Region**
Baek-Jo Kim¹; Yoo-Jun Kim¹; So-Ra In¹; Hyoung-Gu Nam¹; Byung-Gon Kim²
¹*National Institute of Meteorological Sciences, KMA, Korea*; ²*Gangneung-Wonju National University, Korea*
- P3. Using multi-sensor multi-year statistics of convective events to improve nowcasting systems**
Kathrin Wapler
DWD – Germany
- P4. Utilization of 15-yr characteristics of weather radar and lightning data for improvement of Czech Hydrological Institute’s convective storm nowcasting system**
Petr Novak; Hana Kyznarová
Czech Hydrometeorological Institute, Czech Republic
- P5. The CI and RDT NWCSAF Convection Products**
Jean-Marc Moisselin; Michaël Claudon; Frédéric Autonès
Météo-France, France
- P6. Combination of object-based probabilistic nowcasting and NWP ensemble**
Rafael Posada; R. Feger; M. Schultze; K. Wapler; M. Werner
DWD, Germany
- P7. WRF-ARW based systems for nowcasting and very-short range forecasts at the Meteorological Service of Catalonia**
Jordi Moré; Jordi mercader; Abdelmalik Sairouni; Manel Bravo
Meteorological Service of Catalonia, Spain
- P8. Radar-Based Nowcasting by Combining Centroid Tracking and Motion Vector of Convective Storm**
Youn Choi; Kwang-Ho Kim; Sung-Hwa Jung; Kun-Il Jang
Korea Meteorological Administration, Republic of Korea
- P9. Very Short-Term Forecasting of Precipitation Based on Hybrid Surface Rainfall Technique in Korea**
MyoungJae Son; Young-A Oh; Ji-Won Kim; Kyung-Yeub Nam; Kun-Il Jang; JeungWhan Lee
Korea Meteorological Administration, Republic of Korea
- P10. Improvements of Motion Vector in Variational Echo Tracking Technique by Correction of Initial Guess**
Kwang-Ho Kim¹; Jong-Hoon Jeong²; Sung-Hwa Jung¹; Mi-Kyung Suk¹; Kun-Il Jang¹
¹*Korea Meteorological Administration, Republic of Korea*; ²*Atmospheric Sciences and Global Change, Pacific Northwest National Laboratory, Richland, WA, USA*
- P11. Shaping the future portfolio of the “Extrapolated Imagery” product of the Nowcasting-SAF**
Alexander Jann
ZAMG, Austria
- P12. A comparison between advection nowcasting using Optical Flow velocities and NWP modelled wind fields**
Stephen Moseley; Caroline Sandford
Met Office, UK
- P13. Development of a probabilistic precipitation-nowcasting approach at DWD**
Markus Schultze; Martin Rempel; Robert Feger; Manuel Wener; Kathrin Wapler; Ulrich Blahak
DWD, Germany
- P14. On the impact of machine learning for nowcasting applications**
Alexander Kann; Irene Schicker; Petrina Papazek; Linye Song; Yong Wang
ZAMG, Austria
- P15. Assessment of satellite rainfall nowcasting based on extrapolation technique**
Seon-Young Jeong; Ki-Hong Park; Geun-Hyeok Ryu; Jae-Dong Jang
KMA – Korea Meteorological Agency, R. of Korea
- P16. Current Status of Convective Clouds Discrimination in NMSC/KMA**
Ki-Hong Park; Geun-Hyeok Ryu; Jae-Dong Jang
KMA – Korea Meteorological Agency, R. of Korea
- P17. Nowcasting support using satellite imagery extrapolation technique**
Heeyong Lee¹; In-Chul Shin¹; Chu-Yong Chung¹; Seong-Hoon Cheong¹; Gyu-Won Lee²
¹*KMA, Korea*; ²*Kyungpook National University, R. of Korea*
- P18. pysteps - a Community-Driven Open-Source Library for Precipitation Nowcasting**
Seppo Pulkkinen¹; Daniele Nerini²; A. Pérez Hortal³; C. Velasco-Forero⁴; U. Germann²; L. Forestii²
¹*FMI, Finland*; ²*MeteoSwiss*; ³*McGill University, Canada*; ⁴*Bureau of Meteorology, Australia*

- P19. Detection, tracking, and nowcasting of convective cells using KONRAD3D**
Manuel Werner; Robert Feger; Rafael Posada; Markus Schultze; Kathrin Wapler
DWD, Germany
- P20. First verification results from an analysis-forecast smoother applied at FMI**
Jussi S. Ylhäisi; Mikko Partio; Tuuli Perttula; Leila Hieta; Erik Gregow; Harri Hohti
FMI, Finland
- P21. Convection-induced severe winds over Menorca Island on 28 October 2018. Under the watch of a forecaster**
Catalina Estarella; David E. Liljedahl; Bernat Amengual; Miquel A. Gili
AEMET, Spain
- P22. Construction of a krigged precipitation field based on surface observations and remote sensing tools. Application to the flash-flood event of October 9, 2018, over the east part of Majorca**
Peio Oriá; Xavier Calbet; Pilar Ripodas; Llorenç Lliso
AEMET, Spain
- P23. A new severe weather warnings system to very short term, based on the lightning jump technique**
Jordi Mateo Tierno; Santi Segalà, Montse Aran; Carme Farnell; Tomeu Rigo
Meteorological Service of Catalonia, Spain
- P24. Radar Nowcasting for the German Air Traffic Control**
Ulrich Friedrich; Michael Mott; Kathleen Helmert
DWD, Germany
- P25. Comparing observed and modeled radar reflectivities at different spatial scales**
Chiara Marsigli
DWD, Germany
- P26. Thunderstorms and the public perception of risks**
Kathrin Wapler¹; Nadine Fleischhut²
¹*DWD, Germany*; ²*Max-Planck-Institute for Human Development and Hans-Ertel-Zentrum fuer Wetterforschung, Germany*
- P27. Nowcasting for the road maintenance during winter in CHMI**
Tereza Uhlíková; Lenka Musilová
ČHMÚ – Czech Hydrometeorological Institute, Czech Republic
- P28. Improving OPERA radar data for nowcasting**
Elena Saltikoff; Seppo Pulkkinen; Jaakko Nuottokari
FMI, Finland
- P29. Current status of the predicted satellite imagery generation in NMSC/KMA**
Inchul Shin¹; Heeyong Lee¹; Chu-Yong Chung¹; Seonghoon Cheong¹; Gyu-Won Lee²
¹*National Meteorological Satellite Center / Korea Meteorological Administration, R. of Korea*; ²*Kyungpook National University, R. of Korea*
- P30. Postprocessing at MeteoSwiss to provide local forecasts**
Lionel Moret; Ch. Spirig; J. Bhend; J. Rajczak; S. Hemri; M. Liniger
MeteoSwiss, Switzerland