



2nd MedCyclones & 9th European Storm Workshop

Centre International de Conférences, Météo-France, Toulouse, France

28-30 June 2023

Programme

25 June 2023

	Wednesday 28 June	Thursday 29 June	Friday 30 June
9h00 - 10h45	oral session 1 amphitheater	oral session 3 amphitheater	oral session 5 amphitheater
10h45 - 11h15	coffee break	coffee break	coffee break
11h15 - 13h00	oral session 2 amphitheater	oral session 4 amphitheater	oral session 6 amphitheater
13h00 - 14h00	lunch break	lunch break	
14h00 - 15h45	poster session 1 poster room	poster session 2 poster room	
15h45 - 16h00	coffee break	coffee break	
16h00 - 18h00	Breakout discussions conference rooms	General discussion & MedCyclones MC	
18h00 - 21h00	Ice breaker		

For information about travel and accommodation please have a look at this website:

<http://www.meteo.fr/cic/meetings/2023/medcyclones-europeanstorms/venue.html>

Wednesday 28 June 2023

09:00-09:20 **Workshop introduction**
MedCyclones & European Storm committees

Extratropical cyclone dynamics and processes (I)

moderator: Stavros Dafis

09:20-09:40 **Toward the definition of “Medicane”**
Mario Marcello Miglietta, CNR-ISAC

09:40-10:00 **A physical descriptor phase space for Mediterranean cyclones**
Juan Jesus Gonzalez Aleman, Spanish State Meteorological Agency (AEMet)

10:00-10:20 **Process-based classification of Mediterranean cyclones using potential vorticity**
Yonatan Givon, Weizmann Institute of Science

10:20-10:40 **Quantifying relationships between measures of extra-tropical cyclone intensity**
Joon Cornér, University of Helsinki

10:40-10:45 **Discussion**

10:45-11:15 **Coffee break**

Extratropical cyclone dynamics and processes (II)

moderator: Dhirendra Kumar

11:15-11:35 **The Linkage of Serial Cyclone Clustering in Western Europe and Weather Regimes in the North Atlantic-European Region in Boreal Winter**
Joaquim Pinto, Karlsruhe Institute of Technology (KIT)

11:35-11:55 **Atmospheric blockings and downstream cyclones in the Euro-Mediterranean sector**
Pinelopi Loizou, Weizmann Institute of Science

11:55-12:15 **The upstream downstream connection between North Atlantic and Mediterranean cyclones**
Alexander Scherrmann, IAC ETHZ

Windstorms, heavy precipitation and compound events (I)

moderator: Dhirendra Kumar

12:15-12:35 **The Eastern Mediterranean - Catastrophic Flash Floods in Antalya-Turkey**
Meral Demirtas, University of Samsun

12:35-12:55 **Five-year climatology and composite study of precipitation bands associated with extratropical cyclones over the British Isles**
Tianhang Zhang, The University of Manchester

12:55-13:00 **Discussion**

13:00-14:00 **Lunch break**

Climate change and variability in the past and future

poster session 1

Extreme weather events in the Monthly Climate Bulletin of Albania for the period 2017-2023

Petrit Zorba, IGEO

Weather extreme events in Albania related to climate change.

Elsuida Hoxha, The City college of New York

Effect of anthropogenic climate change on explosive cyclogenesis cases in Europe

Mireia Ginesta, Laboratoire des Sciences du Climat et de l'Environnement

Wind-Flood Correlation in Europe

Ching Ho Justin Ng, Guy Carpenter

The phenomena of extreme weather in the territory of Albania during the last years

Gazmir Çela, Institute of Geosciences

Resilience Assessment of Transit-Transfer-Stations exposed to multiple hazards.

Emmanuel Ebo, University of Surrey, United Kingdom

Climatological conditions of the Black Sea-effect snowfall events in Istanbul, Turkey

Hakki Baltaci, Gebze Technical University, Institute of Earth and Marine Sciences

Effects of climate variability and climate change on cyclones in the Mediterranean

Onno Doensen, Oeschger Centre of Climate Change, University of Bern

Changes in the concurrence of atmospheric rivers and explosive cyclones in the North Atlantic

Ferran Lopez-Marti, Uppsala University

Study of Omega blocking and its correlation with the occurrence of temperature extremes over Europe and the Mediterranean region

Iliana Koutsoupi, National And Kapodistrian, University Of Athens

North Atlantic storms drive remote ocean swells into the Eastern Caribbean

Ali Belmadani, ENM/CNRM, Météo-France

New convection-permitting simulations of extreme European cyclones in present and future climates

Ben Harvey, NCAS/University of Reading

Multiproxy reconstruction of the Mediterranean Oscillation Index since 1000 CE

Arnau Sanz I Gil, Czech University of Life Sciences

Extratropical cyclones over the North Atlantic and western Europe during the Last Glacial Maximum and implications for proxy interpretation

Kim Stadelmaier, Institute of Meteorology and Climate Research, KIT, Germany

Extreme precipitation events associated to western Mediterranean cyclones

Rita Pongracz, ELTE Eotvos Lorand University, Dept, of Meteorology

Is there any climatic evidence for the drop of the olive-tree cultivation in the hilly area of Bologna?

Fabrizio Nerozzi, Servizio IdroMeteoClima ArpaE - Italy

Extratropical cyclone dynamics and processes

poster session 1

Large-scale precursors of Mediterranean Tropical-Like Cyclones

Lisa Bernini, University of Genoa - CIMA Foundation

Impact of the Ocean-Atmosphere coupling on extratropical cyclones around the Mediterranean basin

Marco Chericoni, University School for Advances Studies - IUSS Pavia

Role of small-scale SST structure and warming on the Mediterranean Cyclone: Case Study for 'IANOS'

Alok Kumar Mishra, Agricultural Research Organization, Volcani Institute, Israel

Investigating the role of sea eddies on the intensity of cyclones in the Mediterranean Sea

Babita Jangir, Agricultural Research Organization

Localized Finite Amplitude Wave Activity as a Diagnostic for Mediterranean Cyclones: Variability, Life Cycles and Mechanisms

Dor Sandler, Tel Aviv University

Helios, a warm seclusion in the Mediterranean Sea

Leo Pio D'adderio, CNR-ISAC (National Research Council, Institute of Atmospheric Sciences and Climate)

Impacts of Sea Spray in a coupled (ocean-)wave-atmosphere model : realistic Mediterranean and idealized tropical cyclone case studies

Sophia Brumer, LOPS

Characteristics of some of the most important medicanes in the last 40 years with ERA5 reanalysis data

Jesús Gutiérrez-Fernández, Universidad de Castilla de La Mancha

Decomposing the role of dry intrusions for evaporation in the Gulf of Lion during Mistral

Yonatan Givon, Weizmann Institute of Science

A user friendly and flexible set-up for baroclinic life cycle simulations in OpenIFS

Victoria Sinclair, University of Helsinki

Sensitivity to physical parameterizations for kilometer-scale simulations of medicanes Ianos

Didier Ricard, CNRM (Météo-France, CNRS)

Impact of mixed-phase cloud parameterization on warm conveyor belts and upper-tropospheric dynamics

Marie Mazoyer, CNRM, Université de Toulouse, Météo-France, CNRS, Toulouse, France

The medicanes IANOS: a test case in the development of a regional atmosphere-ocean coupled model.

Francesco Maicu, CMCC - Centro EuroMediterraneo sui Cambiamenti Climatici

The intrinsic relationship between cyclones, anticyclones, and Rossby Wave Breakings in the North-Atlantic, and some implications for Mediterranean storm evolution and Atlantic weather regimes

Nili Harnik, Tel Aviv University

Effects of the Mistral on the Overturning Circulation of the Northwestern Mediterranean Sea

Douglas Keller, Laboratoire de Météorologie Dynamique

On the influence of Ocean Mixed Layer and Sea Surface Temperature in development of the three Mediterranean Tropical-Like cyclones, using 1D ocean model and fully-coupled models.

Antonio Ricchi, University of L'Aquila/CETEMPS

15:45-16:00 **Coffee break**

16:00-18:00 **Breakout discussions**

18:00-21:00 **Ice breaker**

Thursday 29 June 2023

Windstorms, heavy precipitation and compound events (II)

moderator: Matthew Priestley

- 09:00-09:20** **Low-level winds jets leading to damaging surface winds in storm Eunice**
Suzanne Gray, University of Reading
- 09:20-09:40** **Identification and climatology of high-wind features within European winter storms**
Lea Eisenstein, Karlsruhe Institute of Technology
- 09:40-10:00** **A global climatology of sting-jet cyclones**
Ben Harvey, NCAS/University of Reading
- 10:00-10:20** **Global analysis of cyclone-induced compound precipitation and wind extreme events**
Martina Messmer, University of Bern
- 10:20-10:40** **Cyclonic compound 'wet' and 'windy' extremes in the Eastern Mediterranean**
Assaf Hochman, Hebrew University of Jerusalem
- 10:40-10:45** **Discussion**
- 10:45-11:15** **Coffee break**

Climate change and variability in the past and future

moderator: Julia Mömken

- 11:15-11:35** **The cold front identification scheme MedFTS_DT in the Mediterranean and the estimation of related frontal precipitation**
Helena Flocas, National and Kapodistrian University Of Athens
- 11:35-11:55** **Return levels of extreme European windstorms, their dependency on the NAO, and potential future risks**
Matthew Priestley, University of Exeter
- 11:55-12:15** **Using seasonal forecasts to enhance our understanding of extreme windstorms**
Jacob Maddison, University of Exeter and Sandra Hansen, Guy Carpenter
- 12:15-12:35** **Impacts of global warming on the development of extratropical cyclones in idealized simulations**
Ting-Chen Chen, Karlsruhe Institute of Technology (KIT)
- 12:35-12:55** **Unravelling the large scale forcing of projected drying in the Mediterranean region**
Benny Keller, Hebrew University of Jerusalem
- 12:55-13:00** **Discussion**
- 13:00-14:00** **Lunch break**

Forecasts and predictions from weather to climate scales

poster session 2

Some results on simulation of wind over rugged terrain using OpenFOAM in parallel processing systems

Neki Frasheri, Academy of Sciences of Albania

Mediterranean Cyclones in the IPSL GCM

Stella Bourdin, LSCE/IPSL

Testing sub-km simulations for Mediane Ianos with HARMONIE-AROME within the context of Destination Earth's on-demand extremes project

Juan Jesus Gonzalez Aleman, Spanish State Meteorological Agency (AEMet)

Investigating Ensemble Forecast Simulations of Mediterranean Tropical-Like Cyclones (Medicanes) Using the ECMWF Integrated Forecast System

Miriam Saraceni, University of Perugia

Can lightning data assimilation improve the lightning forecast? An application over Italy with WRF

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

Mediterranean cyclones and severe weather warnings in Sofia, Bulgaria

Stanislava Tsalova, Sofia University "St. Kliment Ohridski"

Assessing the coastal hazard of mediane ianos through ensemble modelling

Christian Ferrarin, CNR-ISMAR

GNSS-ZTD data assimilation into the WRF model: impact on precipitable water vapor and precipitation forecast over Italy

Rosa Claudia Torcasio, CNR-ISAC (National Research Council, Institute of Atmospheric Sciences and Climate)

The sensitivity of simulated Mediterranean tropical-like cyclones to the numerical model configuration

Ioannis Pytharoulis, Aristotle University of Thessaloniki

Mediterranean cyclones and Saharan dust transport over Bulgaria – two connected weather stories

Anastasiya Stoycheva, National Institute of Meteorology and Hydrology

Predicting European winter storm seasonal activity on different lead times

Gregor C Leckebusch, University of Birmingham

The October 2017 Portuguese wildfires: The influence of Hurricane Ophelia in the extreme atmospheric instability and wind field

Luana Santos, Instituto Dom Luiz (IDL), Faculty of Sciences of the University of Lisbon (FCUL)

Socio-economic impacts and industry applications

poster session 2

What is the best storm severity index for European windstorm losses

David Stephenson, University of Exeter

Cyclones and Safety of Navigation in the Mediterranean Sea

Kareem Tonbol, Arab Academy for Science, Technology and Maritime Transport

Simple loss model for Windstorms over Europe

Dhirendra Kumar, University of Reading

Severe phenomena exposure of socio-economic activity during the warm season in Craiova-Southwestern Romania

Cristina Burada, National Meteorological Administration-RMC Romania

Decadal variability of extreme winds and potential storm losses in Europe using large RCM ensembles

Jisesh Sethunadh, Karlsruhe Institute of Technology (KIT)

Severe droughts in North Africa: drivers, impacts and management

Meryem Tanarhte, University Hassan II - Mohamedia-Morocco

Contrasting tail risk in seasonal forecast models

Richard Dixon, Inigo Insurance - Department of Meteorology, University of Reading

Windstorms, heavy precipitation and compound events

poster session 2

The Sources of Heavy Precipitation Predictability; The Case of the 'Wet' Red Sea Trough

Tair Plotnik, Hebrew University of Jerusalem

Dry intrusions in the rear of Mediterranean cyclones govern large-scale dust storms in North Africa

Shira Raveh-Rubin, Weizmann Institute of Science

Where does the precipitation moisture for the Medcane Qendresa come from?

Patricia Coll Hidalgo, Environmental Physics Laboratory (EPhysLab), University of Vigo

Role of post-tropical cyclones in the hydrological cycle of the northwestern Iberian Peninsula

Albenis Pérez Alarcón, Environmental Physics Laboratory (EPhysLab), University of Vigo

Convective environments along Mediterranean cyclone tracks: exploring severe surface impacts

Andrea Angelidou, University of Bern

Relating compound extremes to Mediterranean cyclones

Alice Portal, Universität Bern

The extreme windstorm associated to the landfall of post-tropical cyclone Leslie in Portugal

Miguel Lima, Instituto Dom Luiz (IDL), Faculty of Sciences of the University of Lisbon (FCUL)

Low-level winds and precipitation associated with subtropical cyclones over the western South Atlantic basin

Andressa Andrade Cardoso, University of São Paulo

The downward transport of strong wind by convective rolls in a Mediterranean windstorm

Wahiba Lfarh, Université Paul Sabatier / Laboratoire d'Aérodynamique

The role of extratropical cyclones on drought end in the Iberian Peninsula

Margarida Liberato, Universidade de Trás-os-Montes e Alto Douro

Co-occurring British flood-wind events (1980-2080): Their anatomy & drivers

John Hillier, Loughborough University, Geography and Environment

15:45-16:00 Coffee break

16:00-18:00 General discussion & MedCyclones MC Meeting

Friday 30 June 2023

Socio-economic impacts and industry applications

moderator: Ting-Chen Chen

- 09:00-09:20** **Future changes to risk from extratropical wind storms in Europe using Lagrangian feature tracking**
Jennifer Catto, University of Exeter
- 09:20-09:40** **The impacts of European windstorms based on regional climate models and insurance perspective**
Inovasita Alifdini, Karlsruhe Institute of Technology (KIT)
- 09:40-10:00** **Windstorm losses in Europe - What to gain from damage datasets**
Julia Moemken, Karlsruhe Institute of Technology (KIT)
- 10:00-10:20** **A framework for understanding the correlation between aggregated losses of compound events.**
Toby Jones, University of Exeter
- 10:20-10:40** **From High Waters to High Stakes, Attributing Acqua Alta Events in Venice to Climate Change and the Efficacy of MoSE adaptation strategy**
Davide Faranda, CNRS
- 10:40-10:45** **Discussion**
- 10:45-11:15** **Coffee break**

Forecasts and predictions from weather to climate scales

moderator: Platon Patlakas

- 11:15-11:35** **Extreme weather forecasting at kilometre-scale: insights from two case studies within the Destination Earth Initiative**
Estibaliz Gascon, European Centre for Medium-Range Weather Forecasts
- 11:35-11:55** **A model intercomparison project (MIP) to improve predictions of Mediterranean cyclones**
Florian Pantillon, CNRS - LAERO
- 11:55-12:15** **Enhancement of the predictability of intense Medicanes via warmer SST**
Claudio Sanchez, Met Office
- 12:15-12:35** **Investigating the predictability of Mediterranean cyclones and their severity**
Benjamin Doiteau, LAERO and CNRM
- 12:35-12:55** **Seasonal forecast skill of severe winter windstorms over Europe and assessing the influence of dynamical factors**
Lisa Degenhardt, University of Birmingham
- 12:55-13:00** **Discussion**