



Mediterranean Cyclones and Their Impacts in Europe under Current and Future Climate

Guest Editors:

Dr. Mihaela Caian

National Meteorological
Administration, Bucharest,
Romania

Dr. Florinela Georgescu

National Meteorological
Administration, Bucharest,
Romania

Deadline for manuscript
submissions:

closed (26 April 2021)

Message from the Guest Editors

The Mediterranean cyclones formed mainly in the Central and Eastern sea-side are often at the origin of storm tracks over SE Europe. Along their trajectory they transport latent heat, enhance baroclinicity, and may interact with upper-level PV anomalies (often under unstable jet-stream) and with regional forcing, leading to an intensified development and to extreme weather events.

Regarding their predictability, it has been shown that intense storms are actually less predictable, the same being valid for intensity, cloud features or associated precipitation versus location. In the long range, winter storm tracks appear more predictable, consistent with the predictable drivers from the upper troposphere jet flow.

This Special Issue aims at advancing knowledge on the formation and evolution mechanisms of Mediterranean cyclones, their predictability, links with the slow drivers of coupled sea-atmosphere variability, and their statistics' changes under projected climate change. It also aims at advancing knowledge on changing European hazards (windstorms, heavy precipitation) associated with Mediterranean cyclones that could further improve the projection of impacts in SE Europe.





an Open Access Journal by MDPI

Editor-in-Chief

Prof. Dr. Ilias Kavouras

Environmental, Occupational,
and Geospatial Health Sciences,
CUNY School of Public Health,
New York, NY 10027, USA

Message from the Editor-in-Chief

Continued developments in instrumentation and modeling have driven atmospheric science to become increasingly more complex with a deeper understanding of concepts, mechanisms, and interactions. This is the field that innovation built and it has led to a better appreciation for the complexity with atmosphere. Human life is intertwined in this complexity as we strive to better understand our atmosphere. Climate change is constantly stretching the limits of our thinking and forcing new ideas and concepts to be played out. Welcome to the Anthropocene!

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Journal Rank: CiteScore - Q2 (*Environmental Science (miscellaneous)*)

Contact Us

Atmosphere Editorial Office
MDPI, Grosspeteranlage 5
4052 Basel, Switzerland

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