



CLIMATE CHANGE | ClimaMeter, the new tool that shows the origin of extreme events in real-time

ClimaMeter displays a clear and detailed illustration of whether the impact on the climate is caused by natural variability or anthropogenic effects

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As the world faces the growing challenges of climate change, an international team of researchers has launched a **cutting-edge platform** to directly tackle one of the most pressing questions: **to what extent does climate change alter extreme weather events?**

The recent report from the United Nations' Intergovernmental Panel on Climate Change (IPCC) emphasized the urgent need to address global climate change. It highlighted the acceleration of extreme weather events and their impact on vital ecosystems and society.

In this context, the team of researchers at the National Institute of Geophysics and Volcanology (INGV), in collaboration with the Centre National de la Recherche Scientifique (CNRS), the Swedish University of Uppsala and the Abdus Salam International Centre for Theoretical Physics (ICTP) in Trieste focused on some extreme events that occurred this summer such as the extratropical storm Poly that hit central Europe, the exceptional heatwave Cerberus that hit the central Mediterranean and the intense rainfall at the end of August on Mediterranean islands and in northern Italy.

*"The main aim of the project is to **provide a quick analysis of the role of climate change and natural variability in extreme weather events**, with particular attention to specific phenomena such as **cyclones, heatwaves, and heavy rainfall**", explains Tommaso Alberti, a researcher at INGV. "This allows for clear and precise information on the impacts of human emissions on extreme events, offering a quick perspective immediately after the event, as well as a more technical description and discussion of the event once it has ended."*

ClimaMeter, with a graphical representation, provides a clear and detailed view of the natural or anthropogenic origin of the extreme event. This provides **an easy-to-use tool for understanding the** often underestimated **dimension of climate change**.

"The newly launched platform represents a significant step towards a deeper understanding of the link between climate change and extreme weather events. We will feed the database with extreme events that have occurred in the past years and we expect to offer, using real-time data of land surface pressure, wind speed, precipitation amount and temperature, obtained from the MSWX, a database with high temporal resolution weather parameters, a solid basis for future analysis and forecasting", the researcher adds. "Our methodology is based on the search for weather conditions analogues to those that caused the extreme event of interest using data available in the so-called 'satellite era', i.e. the period since 1979 or since widespread observations of climate variables from satellites became available. We analyse separately the early decades of the satellite era (1979-2000, 'past') and the more recent decades (2001-2022, 'present') and then compare them to understand how selected weather conditions have changed between the two periods and whether these changes are likely due to natural climate variability or anthropogenic climate change. By using historical data and not numerical model simulations, we can get a quick and reproducible picture of the effects", Tommaso Alberti explains.

The **platform** can be reached at <https://www.climameter.org/home> where there is **detailed and intuitive information for the benefit of everyone: the scientific community, information professionals, institutional authorities and citizens.**

"In the future, the platform can be used to provide crucial information for the development of mitigation strategies and adaptation to the changing effects of climate change," Alberti concludes.

[ClimaMeter](#)

ClimaMeter the new tool that shows the origin of extreme events in real-time: [Video interview with Tommaso Alberti](#)

Images attached to e-mail

Useful link:

Paper: [A climate-change attribution retrospective of some impactful weather extremes of 2021](#) on Weather and Climate Dynamics

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