EGU23 Media Tip Sheet: How we affect the weather and how it affects us

Wild weather events are happening around the world and impact everything from human health to the survival of our favorite vino. The following presentations offer examples of how geologic events, human behavior, and atmospheric interactions all can have rippling effects on weather phenomena.

The role of the ocean for the development of heat waves over Europe

Predicting how often and how long heat waves might hit Europe requires a better understanding of what drives these extreme events. Looking at the 2018 North Atlantic sea surface temperatures (SST), researchers used modeling to see if there were connections between ocean anomalies and European heat waves. They found cold North Atlantic SST can favor heat wave conditions in eastern Europe.

Monday 24 April 08:30-10:15 CEST
Session CL2.5

Links between weather and seasonal influenza epidemics

It may seem like weather and flu season are connected, but there is a lot of uncertainty in linking health to weather variations. Researchers looked at long-term epidemiological and meteorological datasets for communities in the Czech Republic during the 1982/83 and 2019/20 epidemic seasons to better understand weather and influenza. Preliminary results found high excess mortality with low temperatures, while above-average temperatures were linked to lower morbidity. Understanding the linkage between weather and spread of the flu can help prevent and mitigate epidemics for at-risk populations.

Monday 24 April 08:53 CEST
Session NH9.9

Global perturbation of stratospheric water and aerosol burden by the Hunga Tonga eruptions: a 1-year aftermath

The 2022 Tonga submarine eruption injected sulfur and water up to 58 kilometers into the atmosphere. New research tracks the evolution of stratospheric moisture and sulfate aerosol plumes in the minutes to months after the eruption, at both kilometer and planetary scales. These detailed observations over a year provide the first accurate assessment of the stratospheric aftermath of the Hunga Tonga eruptions, including how it altered climate.

Monday 24 April 16:20 CEST
Session AS3.13

Impact of drought on the water status of vines in a Bordeaux vineyard

In southwest France, vineyards cover up to 42% of agricultural land. Climate change is stressing these vineyards, changing average temperatures and precipitation, as well as driving extreme weather events like heat waves. Bordeaux vineyards are susceptible to these changes, with grape yields and quality suffering. New research looks at how the type of soil can affect the soil-vine-atmosphere interactions.

Tuesday 25 April 14:45 CEST

Session SSS9.1

Triple jeopardy: The Tonga tsunami, a storm surge, and a meteotsunami simultaneously hit the US East Coast on 16-17 January 2022

Low atmospheric pressure waves from the 2022 Tonga eruption created tsunamis in the Atlantic Ocean. During the same time, a storm surge from a midlatitude cyclone and a meteotsunami from high-frequency atmospheric pressure disturbances combined, creating cumulative flooding effects on the U.S. East Coast. Researchers reveal details about this triple-hazard event, including how atmospheric processes can drive sea level response.

Thursday 27 April 11:05 CEST

Session NH5.1

A new framework for drought definition, identification, and preparedness

New terms like flash droughts, megadrought, and anthropogenic droughts have entered our conversations, but these terms can be confusing to nonscientists and can hinder hazard preparation. Researchers propose a framework to better define extreme events. They propose inverting a pyramid of priorities to collaborate with stakeholders and policymakers to define different levels of damage, use historical data and modeling to assess the drivers and frequency of events, and define what thresholds of impacts and mitigation actions. They provide two examples of this approach and include a discussion on how to facilitate communication and empower action between scientists and communities.

Thursday 27 April 12:15 CEST

Session HS2.4.4

Freshly fallen snow with full of microplastics: A scientific research in Riga central and peripheral area, Latvia

Fresh snow samples from six locations—spanning urban, rural, and remote regions—were collected around Riga in Latvia to test for microplastics. Microplastics were detected in all snow samples, covering 16 polymer types, with the least contaminated snow found in the remote Gauja

National Park. The team notes that microplastic contamination is closely related to human activities and local sources.
Friday 28 April 11:35 CEST
Session AS3.10