

World Weather Attribution

Statistical EEA methods A perspective from World Weather Attribution

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Requirements for rapid attribution methods:

- Analysis can be done quickly (doesn't require a lot of computing power)
- Can be applied globally
- Robust, transparent methodology
- The 'event' of interest can be clearly defined
- Results are easy to communicate and understand
- Supported by other lines of evidence

Key aspects of WWA's protocol:

- The weather 'event' is defined based on the **impacts**
- All reports include a comprehensive assessment of other factors increasing **vulnerability & exposure**
- Local experts are involved in the whole process from defining the event to interpreting the results
- Results are communicated in different forms for different audiences

Following our 2023 Canada wildfires study, the Canadian Federal Environment Minister described our findings as a "warning" and called for cross state collaboration on emission reductions and adaptation in Canada. His comments were widely reported in Canadian media.

14:14

Flooding disaster more intense due to climate change, Spanish PM says

Spanish Prime Minister Pedro Sanchez says experts agree that the recent flooding in his country would have been less intense without the impacts of climate change.

The world is giving "increasingly loud signals," he says.

He says the threat is obvious to everyone, but that at this "crucial time" for humanity we are seeing many governments hesitate and slow down when they should be picking up the pace.



At COP28, the President of Kenya referenced our East Africa drought and extreme rainfall studies. *"…catastrophic flooding swiftly followed the most severe drought the region has seen in over 40 years. Scientific evidence clearly and strongly links these events to human-induced climate change."*





Year



How has climate change influenced the average October temperature in Madagascar?



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Constraints on statistical methods:

- Dependent on availability of long time series of high-quality observations
- Requires climate models that can represent similar events sufficiently well
- Can't use for all hazards
- Difficult to model compound events
- Limited information about 'impossible'/unique events

Scope for improvement

- Increase attribution capacity outside established centres (esp. Global South)
- Identify contributions from other drivers (eg dynamical processes)
- Move beyond univariate attribution spatiotemporal / multivariate models
- Impact attribution / contributions to impacts from other factors

• Which other methods could add the most information?