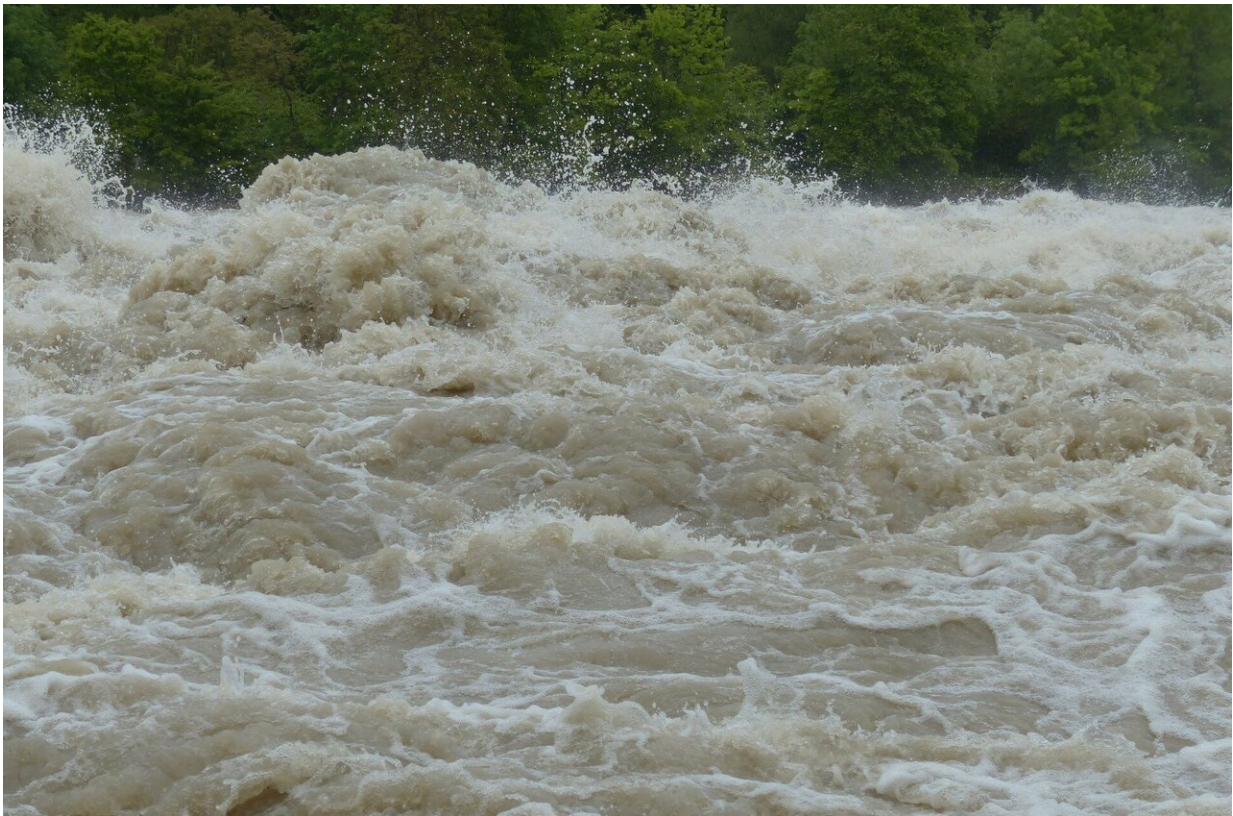


A look back into record-breaking 2020 mei-yu rainfall and flooding throughout China

October 4 2021



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During summer 2020, heavy precipitation affected a significant portion of China and East and South Asia. The Yangtze River basin bore the brunt of extensive flooding, which caused loss of lives, considerable

property damage and prompted millions of people to move to higher ground. To better understand why annual "mei-yu" conditions began earlier and ended later than normal, Dr. Ambrogio Volonté and his team from the University of Reading focused on specific atmospheric dynamics throughout China's Yangtze River region that contributed to such an unusual season. They have just published their research and findings in *Advances in Atmospheric Sciences*.

"The amount of rainfall in June and July 2020 in the basin was higher than in the previous 20 years, and anomalously high in most sub-basins, with similar results applying to river discharge," said Dr. Mark Muetzelfeldt, a main contributor in Volonté's study.

Results show that the East Asian Summer Monsoon front played a dominant role bringing frequent persistent precipitation to the Yangtze River basin. Typically, the front progresses farther north during [early summer](#). However, in 2020, the front stalled south of its usual position, leading to a longer mei-yu season with several multi-day rain events throughout most of the river valley.

Researchers analyzed two 5-day [heavy precipitation](#) episodes during this extended mei-yu season. Warm monsoonal and cool continental air masses frequently converged over the region, as suggested by the unusual frontal position. Upper air circulation also played a role, with pattern variations affecting the air [mass balance](#) moving toward the front at lower levels. This caused the two heavy rain events to develop with different intensity and in different locations along the river valley.

The full study provides more in-depth statistics resulting from the historic [summer](#) 2020 mei-yu rainfall. Researchers also showcase several analysis tools that they developed specifically to study similar high-precipitation seasonal events.

More information: Ambrogio Volonté et al, Magnitude, Scale, and Dynamics of the 2020 Mei-yu Rains and Floods over China, *Advances in Atmospheric Sciences* (2021). [DOI: 10.1007/s00376-021-1085-z](https://doi.org/10.1007/s00376-021-1085-z)

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