

Three types of boreal summer intraseasonal oscillation found to influence precipitation over the Yangtze River Valley

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Intense Rainfall in Yangtze River valley during Summer in 2023. Credit: Sun Bo

The Yangtze River Valley (YRV) is one of the most densely populated and economically developed regions in China. Summer precipitation over this region shows considerable intraseasonal variability with a period of 10–90 days, which can induce extreme precipitation events and lead to massive economic losses and human casualties.

The boreal summer intraseasonal oscillation (BSISO) is the intraseasonal variability active in the tropical Indian Ocean and western Pacific [region](#). Over the last three decades, scientists have studied the influence of the BSISO, because it is an essential predictability source in extended-range forecasts.

A new study published in *Atmospheric and Oceanic Science Letters* by Prof. Bo Sun's research team from Nanjing University of Information Science and Technology deepens our understanding of the relationship between the BSISO and [precipitation](#) over the YRV. Based on the three types of BSISO defined by a recent study, the team found that precipitation over the YRV is affected in various ways, but mainly in terms of its occurrence frequency and duration.

The research team obtained their conclusions by analyzing high-resolution reanalysis datasets, which are a blend of past observations and model results.

"We classified all selected BSISO events into three types using a cluster analysis method," explains the corresponding author of the study, Prof. Bo Sun. "Then, we identified the different impacts of these three types of BSISO on summer precipitation over the YRV using composite analysis."

Broadly, this research reveals that these three types of BSISO have different impacts on precipitation over the YRV, but the possible mechanisms leading to the different impacts are also investigated and

discussed in the paper, which is important for applying the findings in a practical sense for rainfall forecasting in the region.

More information: Xiangyang Cui et al, Influence of three types of boreal summer intraseasonal oscillation on summer precipitation over the Yangtze River Valley, *Atmospheric and Oceanic Science Letters* (2023). [DOI: 10.1016/j.aosl.2023.100394](https://doi.org/10.1016/j.aosl.2023.100394)

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