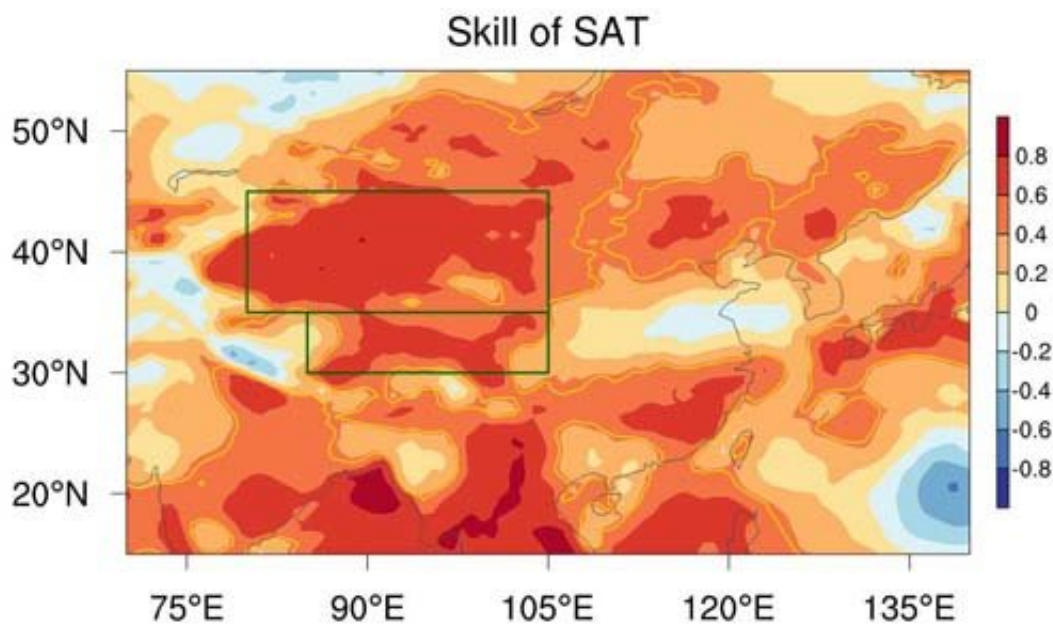


# Scientists can make skillful seasonal forecasts of summer temperature in western China

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Prediction skill (temporal correlation coefficients) of summer SAT for GloSea5 hindcasts. The yellow contours represent grid-point statistical significance exceeding the 5 percent confidence level. The green boxes indicate the domains of northwestern China (35°-45°N, 80°-105°E) and the Tibetan Plateau (30°-35°N, 85°-105°E). Credit: Chaofan Li

Surface air temperature (SAT) is an important hydrological and climatic variable in western China. In contrast to the monsoon regions in eastern

China, most regions in western China are arid, semi-arid or subject to snow cover. Thus, variations of SAT in summer in western China are key in connection with heat waves, the hydrological cycle, ecosystems and agriculture. The ability to predict SAT skillfully is an important target for science.

In a recent paper published in *Advances in Atmospheric Sciences*, a group of scientists from the Institute of Atmospheric Physics, Chinese Academy of Sciences and the UK Met Office's Hadley Center reveal useful predictions of SAT in western China using the GloSea5 operational forecast system from the UK Met Office. The SAT reproduced by the model shows high correlation with observations over most regions of western China, in both northwestern China and the Tibetan Plateau.

"There are two important sources of skill for these predictions in western China: interannual variation of SST in the western Pacific and the SST trend in the tropical Pacific," says Dr. Chaofan Li, the study's lead author. "We found that the tropical SST change in the last two decades, with warming in the western Pacific and cooling in the eastern Pacific, connects with the warming trend in northwestern China, and the interannual variation of SST in the western Pacific gives rise to a reliable prediction of SAT over the Tibetan Plateau."

The predictability and reliability demonstrated in this work is potentially useful for climate services providing early warning of [extreme climate events](#), and could ultimately lead to useful economic benefits.

**More information:** Chaofan Li et al, Skillful Seasonal Forecasts of Summer Surface Air Temperature in Western China by Global Seasonal Forecast System Version 5, *Advances in Atmospheric Sciences* (2018). [DOI: 10.1007/s00376-018-7291-7](https://doi.org/10.1007/s00376-018-7291-7)

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