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## Is the Current Subtropical Position of the Tibetan Plateau Optimal for Intensifying the Asian Monsoon?

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It is known that the existence of the Tibetan Plateau (TP) intensifies the Asian summer monsoon. However, is the current subtropical location of the TP optimal for energizing the monsoon? Would monsoon dynamics become simpler if the TP were located in the tropics? A series of experiments with the NCAR CESM fully-coupled model show that a change in the current subtropical TP causes apparent responses in both divergent and rotational motions of the atmosphere in the tropics and higher latitudes, respectively. When the TP is moved southward, the atmospheric response is featured by more apparent thermally-driven and divergent parts of atmospheric motion, and the tropical South Asian monsoon becomes stronger. However, the subtropical East Asian monsoon becomes weaker due to the intensification of the Northwest Pacific subtropical high. In the experiments in which the TP is moved northward, the subtropical East Asian monsoon strengthens at some points but the tropical South Asian monsoon weakens. Besides, variations in the meridional position of the westerlies relative to the TP lead to an anomalous distribution of precipitation in East Asia. In these latter experiments, the atmospheric response is apparently featured by rotational characteristics of the atmospheric motion.

Results also show that the meridional shift of the TP would also cause changes in the African summer monsoon, whose variability is closely linked to the variations of the Asian summer monsoon.