

# **The impact of the Western Pacific Subtropical High on summer tropospheric ozone in East Asia**

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The Western North Pacific Subtropical High (WNPSH) has been considered an important factor controlling summer monsoon rainfall and tropical storms in East Asia. This study investigated the changes in tropospheric ozone associated with variability in the WNPSH using an off-line coupled chemistry-climate model. Tropospheric ozone tended to decrease in the East Asia region with a stronger WNPSH. This was primarily caused by an increase in the cloud cover over East Asia, accompanied by a stronger southeasterly monsoonal flow associated with a build-up of the WNPSH. The opposite condition occurred with the weakening of the WNPSH. Our results suggest that the WNPSH is a prime circulation system affecting not only precipitation but also tropospheric ozone over East Asia, which may also provide a source of chemistry prediction.

Key words: western Pacific subtropical high, tropospheric ozone

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