



## **Impact of aerosols on tropical cyclone-induced precipitation over mainland China**

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In this paper, the impacts of aerosols on Tropical Cyclone (TC) precipitation over mainland China during 1980-2014 were investigated. The TC induced precipitation is objectively identified based on Western North Pacific (WNP) TC historical track and daily precipitation from meteorological stations. Aerosol optical depth (AOD) from the Second Modern-Era Retrospective Analysis for Research and Applications (MERRA-2) is used to represent the amount of aerosol pollution. The interdecadal and interannual variations of aerosol optical depth (AOD) and TC precipitation were analyzed over the past 35 years. The downward trend are found in the annual numbers of TCs that affect China, but there is an increase in the average number of rain days per TC per year. Meanwhile, the upward trends in the TC daily precipitation are accompanied with the increases in the AOD on average. These variations in TC precipitation is most likely associated with aerosol indirect effects.