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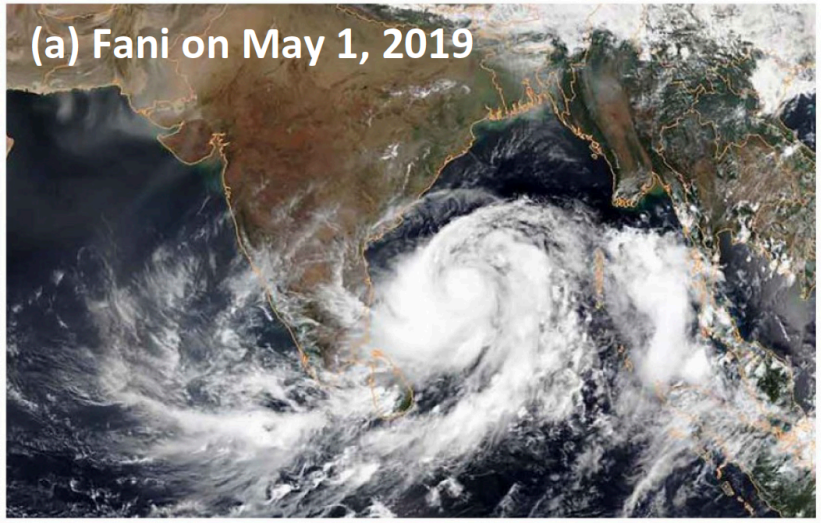
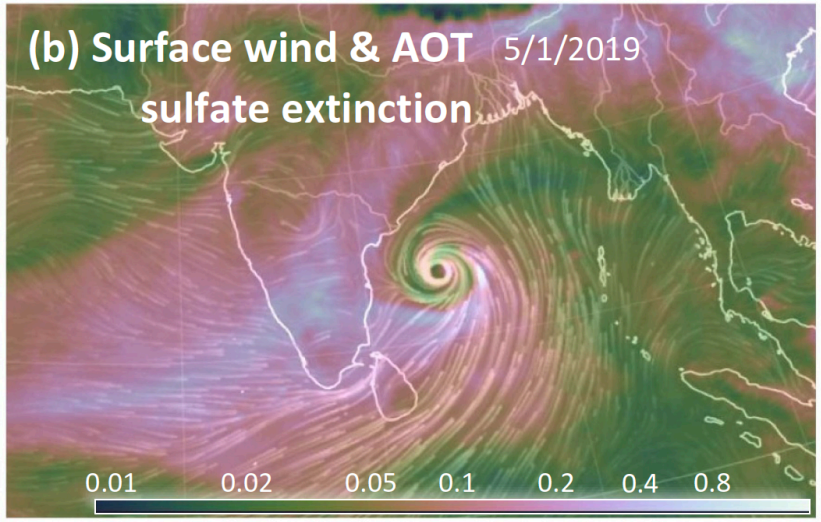
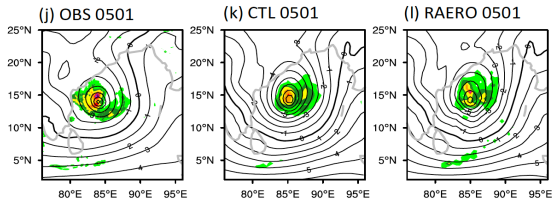
HYPERFACETS





5 km – 50 km
250 members

aerosol reduces the deposition growth of cloud ice crystals



Cyclone Fani: the tug-of-war between regional warming and anthropogenic aerosol effects

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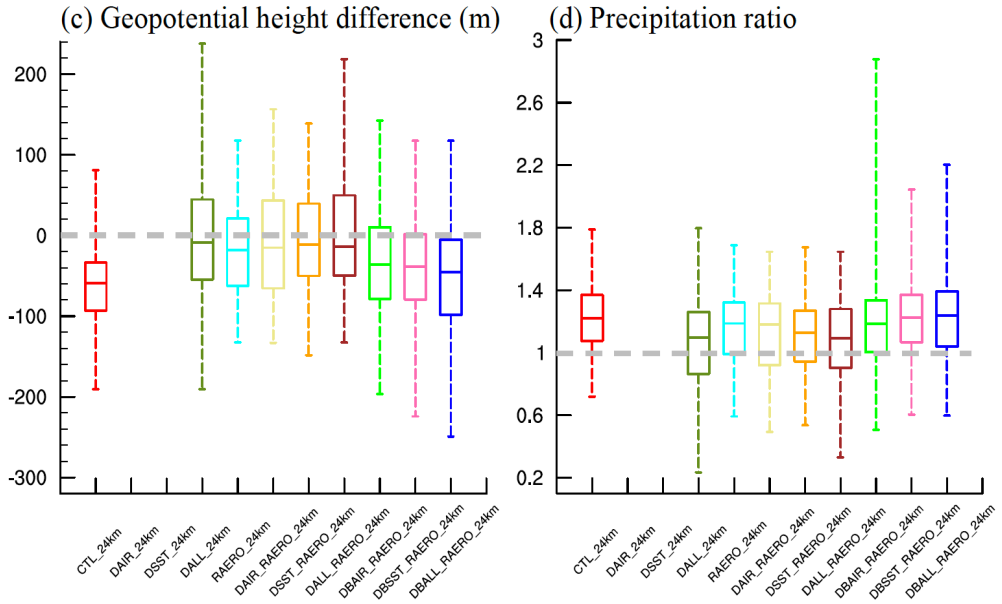
Lin Zhao[1,2], S-Y Simon Wang[2], Emily Becker[3], Jin-Ho Yoon[4] and Avik Mukherjee[2]

Cyclone Fani (2019) developed in the soup of aerosols over very warm Bay of Bengal water. We analyzed the compound effects of aerosols and climate warming on this tropical cyclone.

Method: Quantitative attribution using WRF-Chem with/without anthropogenic aerosols and post-1980 warming (in the air and SST).

Finding: Aerosol and its interaction with rainfall suppressed Fani's strengthening due to warming, but it could not counteract it.



Mechanism: Aerosols affected Fani by modulating the raindrop concentration; warming trends modulated Fani through atmospheric destabilization