

Name: M Roxy
roxy@tropmet.res.in
Indian Institute of Tropical Meteorology
Pashan
Pune 411008
Country: India

Title: SST-precipitation relationship in a changing climate as in observations and climate models

Additional authors:

Additional Affiliations:

Abstract:

It was thought that the monotonous increase of precipitation with respect to sea surface temperature [SST] is limited to an upper threshold of 29°C, over the monsoon basins. The current study finds that there is no upper threshold, and that precipitation continues to increase, even at the highest possible SSTs over the tropical monsoon basins. This helps in quantifying the SST-precipitation relationship a 1°C rise in SST corresponds to a 2 mm/day increase in precipitation. The quantification is useful in understanding the fate of the Asian monsoon in future climate scenarios, with warmer SSTs over the tropical oceans. The revised SST-precipitation relationship is found to be significant for the Asian summer monsoon, in a quantifiable manner, seamlessly through all the timescales from short-term intraseasonal to longterm climate scales. Spatial and temporal dimensions of the sst-precipitation relationship is useful in validating the current climate models.

End