ENSO's influence has not reached the eastern north tropical Atlantic since the mid-1980s

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El Nino-Southern Oscillation (ENSO) is the most dominant mode in interannual timescale. It generates atmospheric teleconnections that modulate the sea surface temperature anomalies (SSTA) over the north

tropical Atlantic (NTA), which further affects climate phenomenon over surrounding and remote regions.

Previous studies have indicated that the impact of ENSO on the SSTA over the entire NTA tends to be unstable. However, a study recently published in *Journal of Climate* by Dr. Chen Wei at the Institute of Atmospheric Physics of the Chinese Academy of Sciences has identified that the decadal variation in the ENSO-NTA connection actually concentrates over the eastern part of NTA (NETA), while the connection between ENSO and the sea surface temperature anomalies over the western part of NTA is stable.

The results suggest that the influence of ENSO conveyed to the entire NTA before the mid-1980s, but thereafter, its influence hardly reaches the eastern part of NTA and is only limited to the western part.

The decadal changes in the ENSO-NETA connection are due to the westward shift in the ENSO-related convection and teleconnections, resulting from the westward shift of Pacific Walker Circulation, induced by the intensified zonal SST-gradient over the equatorial Pacific after the mid-1980s.

"Our result implies a decadal variation in the ENSO-related NETA sea surface temperature anomalies, which may change the climate structures in the surrounding area," said Dr. Chen.

More information: Wei Chen, A Decadal Weakening in the Connection between ENSO and the Following Spring SST over the Northeast Tropical Atlantic after the Mid-1980s, *Journal of Climate* (2022). DOI: 10.1175/JCLI-D-21-0698.1

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