

The influence of Indian Ocean SST on tropical East African rainfall: Insights from observations and general circulation models

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Observational data and GCM integrations are used to investigate how Indian Ocean SST affects precipitation during the boreal autumn (the short rains) in coastal, equatorial East Africa. Collation of observed SST and rainfall data shows that excessively strong short rains are associated with positive SST anomalies in the western Indian Ocean and negative anomalies in the eastern part of the ocean. Examination of observed wind and humidity fields suggests that unusually high precipitation results when these SST anomalies suppress the westerly winds that usually transport moisture away from the African coast. Further insights are gained from by imposing both idealised and observed SST anomalies on an atmosphere only GCM (HadAm3).

Tuesday II (Talk)