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Relationship between intraseasonal tropical oceanic variability and West African seasonal rainfall

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The intraseasonal evolution of sea surface temperature (SST) anomalies over the tropical region of Pacific and Atlantic oceans is studied, relating them with Sahel seasonal rainfall over the summer.
First, the different behavior of anomalous rainfall during the monsoon will be analyzed using latitude-time plots of diary precipitation over the region and exploring the principal components explaining it, as well as the associated oceanic forcing.
In a second step, singular value decomposition will be performed over longitude-time plots of SST anomalies and latitude-time plots of precipitation, focusing on how the temporary evolution of zonal SST anomalies affects to the monsoon meridional development, isolating typical evolution patterns of the anomalies. Different atmospheric variables will be analyzed attempting to explain the dynamic changes behind the evolution of these anomalies, focusing in zonal wind and wave propagation. The interaction between SST changes, African Easterly Waves activity and the West African Monsoon development will be performed attempting to bring light over teleconnection mechanisms, turning eyes to the main objective, which is to increase the predictability of the Sahelian rainfall.