

What drives “Coastal Niños” in the Southeastern Tropical Atlantic and Pacific?

Joke Lübbecke (GEOMAR Helmholtz-Zentrum für Ozeanforschung Kiel)

Anomalously high sea surface temperatures (SSTs) off the coast of Angola and Namibia in the Tropical Atlantic and off the coast of Peru in the Pacific can have large impacts on the marine ecosystem and cause heavy rainfalls and flooding over land. These Coastal Warm events often occur related to Atlantic Niño or El Niño conditions in the central equatorial Atlantic and Pacific, but there are also events such as in early 2016 in the Atlantic and in early 2017 in the Pacific that are not linked to basin-scale anomalies.

In this presentation, the relative roles of various forcing mechanisms for these warm events are discussed, including remote forcing by equatorial Kelvin waves and local forcing related to regional freshwater input and wind variations and associated heat fluxes, boundary current and upwelling anomalies. With respect to the question of whether a coastal SST anomaly can spread into the central equatorial basin, the role of equatorial heat content will be discussed.