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Coupling Between the Climate Variables of Amazonia and its Surrounding Oceans During Drought Periods.

Antônio M de T Ramos (1,2) and Elbert E N Macau (3)

(1) Potsdam Institute for Climate Impact Research, Germany (detorres@pik-potsdam.de), (2) National Institute for Space Research, Brazil (antonio.ramos@inpe.br), (3) National Institute for Space Research, Brazil (elbert.macau@inpe.br)

Teleconnection patterns between different climate systems have been seen as a feature of the internal dynamics of atmosphere and ocean. However several questions about this non-linear dynamics remain open, especially the interplay of the warming of Oceans and the anomaly precipitation in the Amazon region. For this reason, we investigate how the coupling between the ocean's temperature and the precipitation in Amazon evolve in time. In particular, how does this coupling behave during an anomalous drought period in Amazonia. Here a data-driven approach is applied to detect the coupling time scale between the precipitation in the North/South Amazonia and its surrounding oceans. The framework comprises statistical and information theory approaches that can reveal directional links between the different regional domains. The method is applied on a daily resolution data sets, the variables are average over regional domains well studied in the literature. Finally, the outcomes are systematically analysed seeking patterns that may reveal the underlying dynamics between these climate systems. Also, the study sheds light into the elementary form of the climate network between these systems.