



Mid-troposphere temperature anomaly on the Gulf of Mexico induced by El Niño

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By means of the Global Thermodynamic Climate Model (GTCM), the mid-troposphere temperature anomaly (TmDN) is computed over the Gulf of Mexico, which is induced by the sea surface temperature (SST) anomaly in the Pacific Ocean due to El Niño (or ENSO); and the consequent effect on the Gulf SST, trying to show the atmospheric bridge paradigm originally defined by Alexander, et al (2004).

The TmDN is generated by the respective anomaly of the net (short plus long-wave) radiation at the earth surface. Alternatively, the cloudiness anomaly is negatively correlated with TmDN, according to the linear empirical formula of Garduño and Adem, (1984), that arises from the hypothesis of relative humidity kept fixed in the atmosphere; therefore, this process implies a positive climate feedback.