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# Possible solar signals in the Gulf of Mexico's minimum extreme temperature records

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Minimum extreme temperature series from several meteorological stations of the Gulf of Mexico are spectrally analyzed using the Maximum Entropy Method. We obtained significant periodicities similar to those found in meteorological and solar activity phenomena suggesting in particular, that the solar activity signal is present in the minimum extreme temperature records in this region of Mexico.

The spectral analysis shows important frequencies that coincide with meteorological or solar activity phenomena: A quasi-decadal periodicity (9-11yr) that could be associated to the changing conditions in the North-Pacific ocean and atmosphere, or to the solar cycle, an 8 yr peak coincident with strong El Niño events, a frequency around 3.3 yr present in all stations possibly linked to either short-term El Niño events or to various solar phenomena, a quasi-biennial signal possibly related to the Quasi-Biennial Oscillation and a peak around 5 years also present in all stations, although not always significant, coincident with a harmonic of the sunspot cycle.