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Solar cycle signals in the Pacific and the issue of timings

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We analyse the solar cycle signal in sea level pressure, 1856-2007. Using composites of data from January/February in solar cycle peak years we confirm the strong positive signal in the region of the Aleutian Low found by previous authors. We find, however, that signals in other regions of the globe, particularly in the South Pacific, are very sensitive to the choice of reference climatology. We also investigate the relationship between solar activity and sea surface temperatures in the tropical East Pacific. We find a marked overall association of higher solar activity with colder temperatures in the tropical Pacific that is not restricted to years of peak sunspot number and we do not find a consistent ENSO-like variation following peak years. Both the SLP and SST signals vary coherently with the solar cycle and neither evolves on an ENSO-like timescale. The solar signals are weaker during the period spanning approximately 1956-1997 which we suggest is due to masking by a stronger innate ENSO variability at that time.