



## **Multidecadal variability in eastern tropical Atlantic sea surface temperatures over the past 1700 years**

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Multidecadal variations in Atlantic sea surface temperatures (SST) influence climate over the adjacent continents and beyond and are often associated with the Atlantic Multidecadal Oscillation (AMO). Prior to the instrumental time period, information on multidecadal variability becomes limited, and there is a particular scarcity of sufficiently resolved SST reconstructions. Here, we present an eastern tropical North Atlantic reconstruction of SST based on foraminiferal Mg/Ca that resolves multidecadal variability over the past 1700 years. Multidecadal spectral power is significant, in particular a 64-year cycle suggests the AMO influence on local SST. The multidecadal SST amplitude changes markedly over time and varies by a factor of 7, where the most recent high-amplitude interval commences contemporaneously with the onset of Little Ice Age (LIA) cooling between about AD 1250 and 1500. This transition to persistently cooler SST in the eastern tropical North Atlantic parallels the previously reconstructed shift in the North Atlantic Oscillation (NAO) towards a low mean state. Since a negative NAO would increase, not decrease regional SST we infer that the parallel trends reflect common (probably solar) forcing rather than a mutual influence.