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North Atlantic Oscillation response to anomalous Indian Ocean SST in a coupled GCM

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The dominant pattern of atmospheric variability in the North Atlantic sector is the North Atlantic Oscillation (NAO). Since the 1970s the NAO is well characterized by a trend towards it's positive phase. Recent atmospheric general circulation model studies have linked this trend to a progressive warming of the Indian Ocean. Unfortunately, a clear mechanism – responsible for the change of the NAO – could not be given. This study provides further details of the NAO response to Indian Ocean sea surface temperature (SST) anomalies. We do this by conducting experiments with a coupled ocean-atmosphere general circulation model (OAGCM). We develop a hypothesis of how the Indian Ocean impacts the NAO.