

EGU22-5829

<https://doi.org/10.5194/egusphere-egu22-5829>

EGU General Assembly 2022

© Author(s) 2022. This work is distributed under the Creative Commons Attribution 4.0 License.



Seasonal differences in the persistence of SST's Response to the North Atlantic Jet Stream

Jennifer Mecking¹, Bablu Sinha¹, Ben Harvey², Jon Robson², and Tom Bracegirdle³

¹National Oceanography Centre, Southampton UK

²University of Reading, Reading UK

³British Antarctic Survey, Cambridge UK

The North Atlantic Jet Stream is well known to leave an imprint on the North Atlantic SST in the form of a tri-polar pattern. The majority of the existing research has focused on the winter jet stream position or strength of the jet stream. Here we look at the response of the North Atlantic SSTs to the strength and position of the North Atlantic Jet Stream across all seasons in the CMIP6 piControl simulations. For the case of both the strength and position of the jet stream the multi-model mean response is a tripolar SST pattern, with the response to the changes in strength showing a slight horseshoe pattern with the northern and southern most anomalies connected on the east and most evident in the summer. The SST response to winter and spring jet stream changes persist the longest with the northern most imprint on the SSTs lasting up to 2 years. The response to changes in the jet stream in the summer and fall leave an imprint on the SSTs lasting at most into the following year. Furthermore, we investigate at how these responses vary among the CMIP6 models and potential mechanisms leading to the persistence.