

# Supporting Information for ”Revisiting the Cause of the Eastern Equatorial Atlantic Cold Event in 2009”

Kristin Burmeister,<sup>1</sup> Peter Brandt,<sup>1,2</sup> and Joke F. Lübbecke<sup>1,2</sup>

## Contents of this file

1. Figures S1 to S3

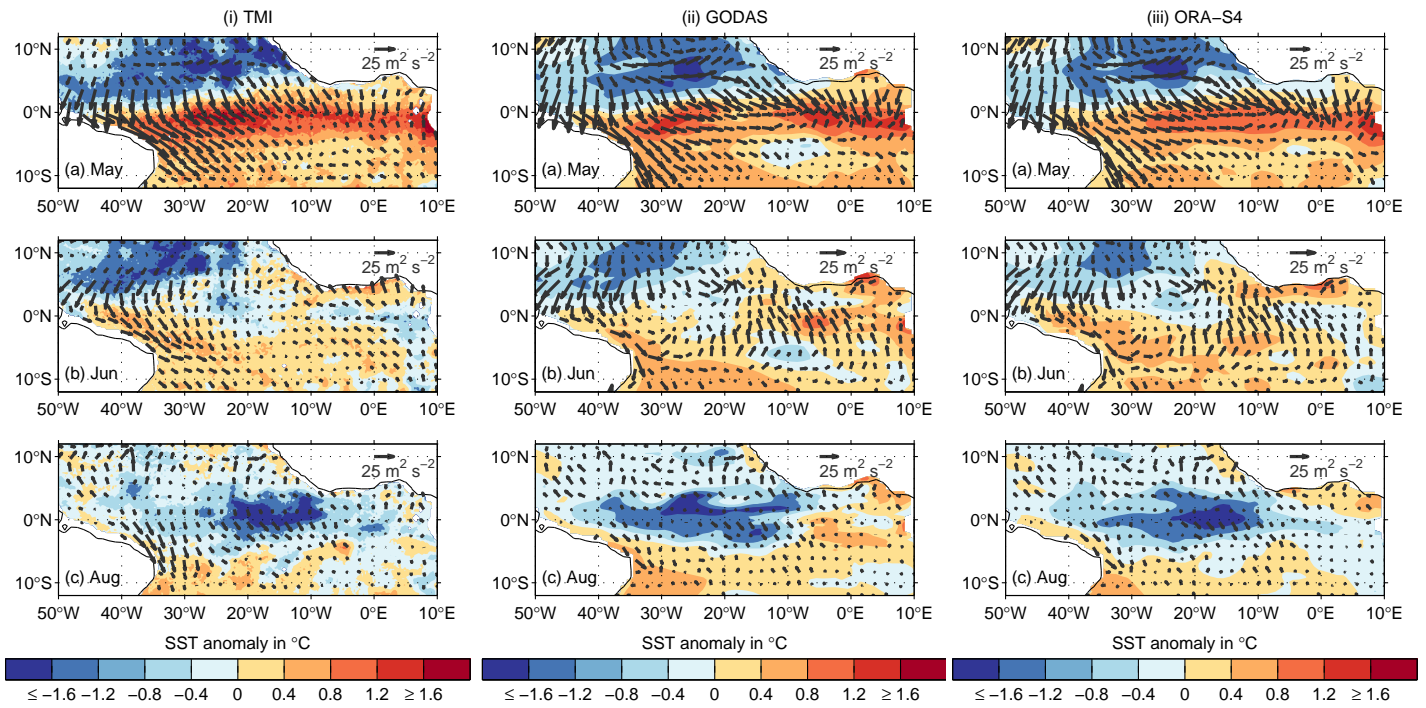
**Introduction** This supporting information provides additional figures, Figures S1-S2 to demonstrate that both reanalysis data sets simulate the 2009 cold event well and Figure S3 to visualize the relative importance of meridional velocity and temperature in the anomalous MTA in 2009.

---

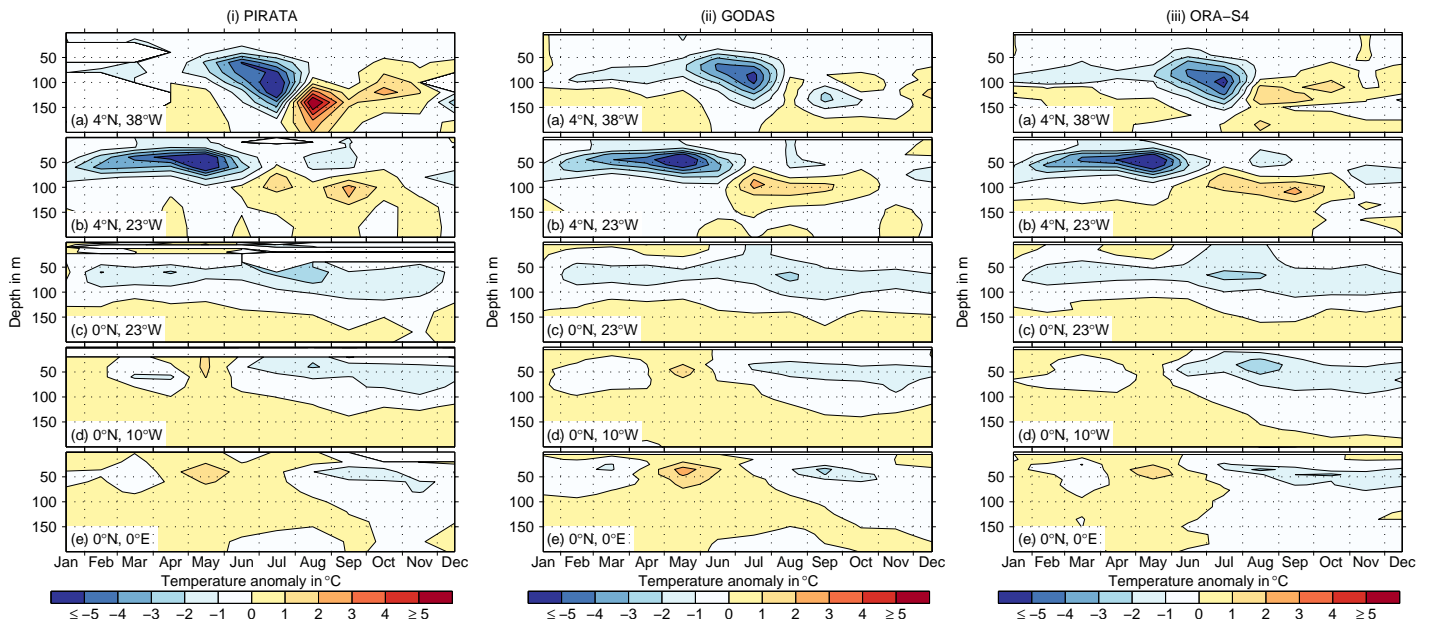
Corresponding author: K. Burmeister, GEOMAR Helmholtz Centre for Ocean Research Kiel  
Düsternbrooker Weg 20, D-24105 Kiel, Germany. (kburmeister@geomar.de)

<sup>1</sup>GEOMAR Helmholtz Centre for Ocean  
Research Kiel, Kiel, Germany

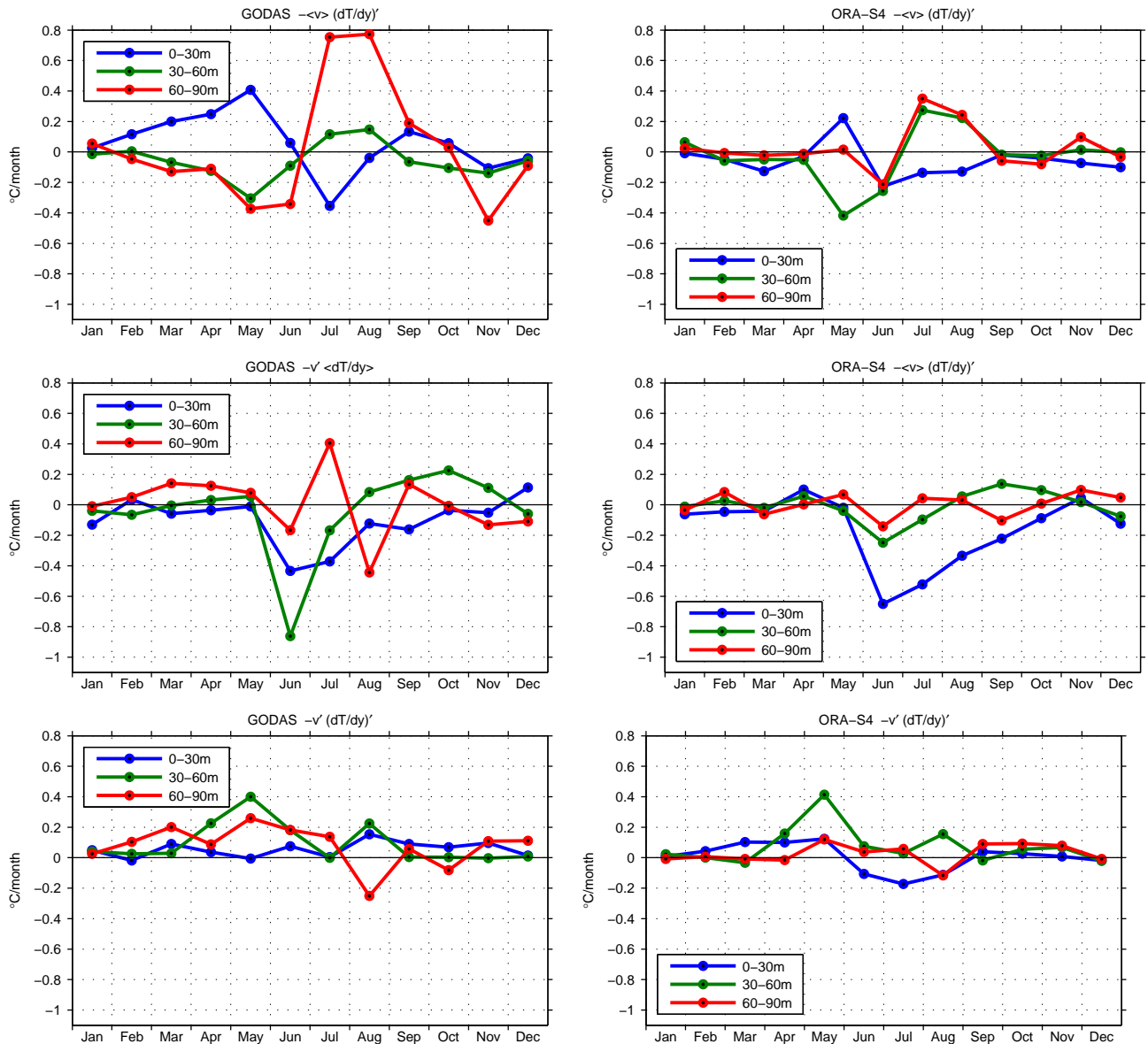
<sup>2</sup>Christian-Albrechts-Universität zu Kiel,  
Kiel, Germany



**Figure S1.** Anomalies of SST (shading) from (i) TMI satellite data, (ii) GODAS and (iii) ORA-S4 reanalysis data and CCMP pseudo wind stress (arrows) with respect to the climatology mean (1998-2011) for (a) May, (b) June and (c) August 2009.



**Figure S2.** Monthly mean temperature anomalies from (i) PIRATA buoys data, (ii) GODAS and (iii) ORA-S4 reanalysis data with respect to the climatology mean (2006-2013) at different PIRATA buoy locations.



**Figure S3.**  $-\langle v \rangle (dT/dy)'$  (upper),  $-v' \langle dT/dy \rangle$  (middle) and  $-v'(dT/dy)'$  (lower) of GODAS (left column) and ORA-S4 (right column) reanalysis data within  $30^{\circ}\text{W} - 15^{\circ}\text{W}$  to  $3^{\circ}\text{S} - 3^{\circ}\text{N}$  for three different depth ranges (0 m-30 m in blue, 30 m-60 m in green, 60 m-90 m in red). The  $\langle \rangle$  denotes monthly mean seasonal cycle values (1980-2014) and the prime denotes 2009 monthly anomaly values with respect to the mean seasonal cycle. Note that positive values indicate a warming and negative values indicate a cooling by meridional advection.