

The rate of coastal temperature rise adjacent to a warming Western Boundary Current is non-uniform with latitude

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Introduction

This supplementary material presents additional information on the spatial trends in 10m temperature of the EAC ROMS configuration. A table comparing trends from the EAC ROMS configuration with CMC satellite SST at the shelf box locations used in the main paper is also shown, as well as a table showing temperature trends over the full timeseries available at each mooring.

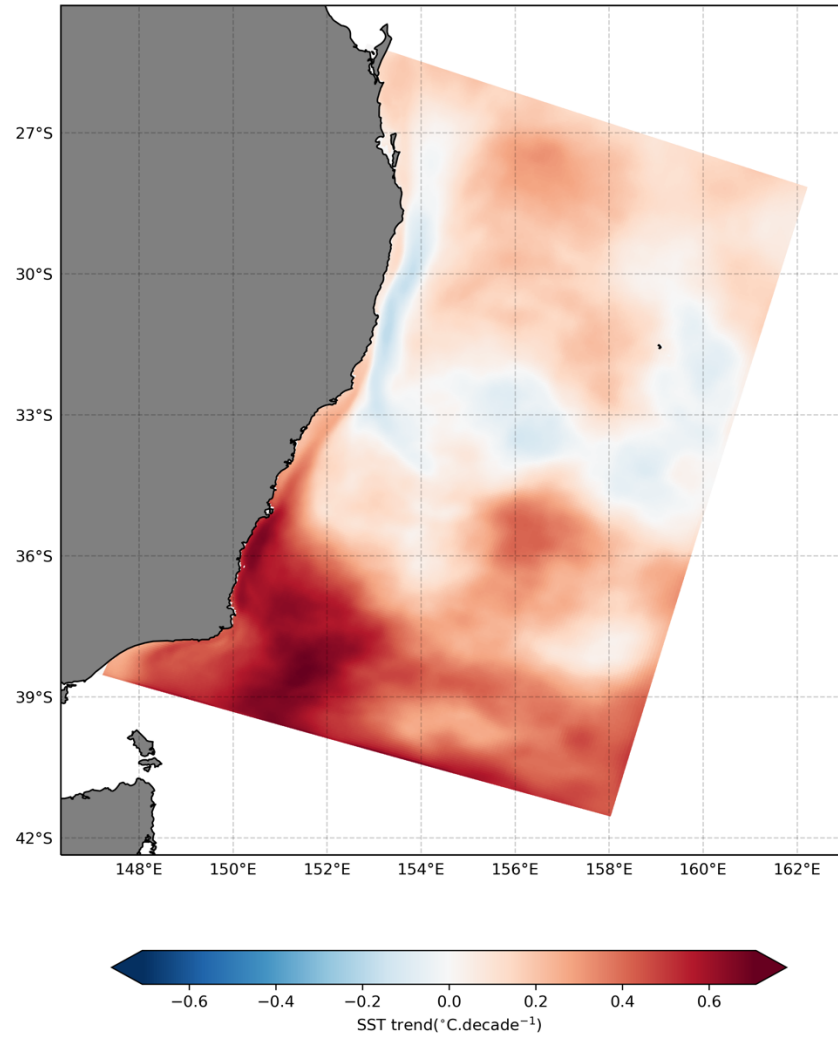


Figure S1. Decadal trend of 10m temperature from the EAC ROMS configuration 1994-2016. Decadal trend is computed from daily means after the seasonal cycle is removed as per the main body of the paper.

Table S1. Table comparing decadal trends of foundation (10m depth) temperature for the period 1994-2016 from the EAC ROMS configuration (ROMS), and CMC satellite sea surface temperature (Observations). Trends and significance are calculated as in the main paper.

		SC		SC phase	Decadal trend	P-value
		Mean	amplitude			
27°S	Observations	24.2	2.82	29.1	0.18	0.0555
	ROMS	23.8	2.4	34.4	0.09	0.505
30°S	Observations	23.3	2.87	36	0.27	0.0272
	ROMS	22.4	2.45	40.3	-0.04	0.544
34°S	Observations	20.9	2.67	38.5	0.46	0.00301
	ROMS	20	2.3	35.8	0.33	0.0444
36°S	Observations	19.2	3.03	39.7	0.48	0.0112
	ROMS	18.5	2.63	40	0.60	9.41E-05
42°S	Observations	15	2.74	39	0.52	0.00298
	ROMS	NA	NA	NA	NA	NA

Note: Temperature extracted from ROMS is temperature at 10m (interpolated)
Decadal trend is computed from the daily means after the seasonal cycle is removed, shaded trends are significant.

Table S2. Temperature trends from shelf moorings over the full extent of the available timeseries.

Latitude	Start date	Trend per decade [°C] (start to 2019)
27°S	2010-12-13	0.1 ± 0.06
30°S	2010-02-20	0.33 ± 0.07
34°S	2008-06-25	0.90 ± 0.06
36°S	2011-03-29	1.6 ± 0.06
42°S	2008-04-08	1.03 ± 0.06