

Comments on revision 1 of "The Historical Representation and Near Future (2050) Projections of the Coral Sea Current System in CMIP6 HighResMPI"

The revised paper is much improved. I am sorry that there is no explanation of the cooling at 400m but that is a minor point.

Some of the writing is still clumsy, verbose etc. I have listed some points below but this side of the paper is best handled at the copy-editor stage.

Minor comments:

Line 34. utilised -> used.

Line 35. 'captured' -> and found that these successfully represented...

Line 37. 'warming signal'. This construct is used a lot later in the paper but always seems clumsy. What you really mean is 'the maximum depth affected by the surface warming'. Maybe there is a better way of saying this.

Line 39. 'with future global warming'. Not needed.

Line 66. Figure 1. As this is a key figure readers skimming through the paper will find it useful to have the full names of NVJ, NCJ and SCJ, as with the other currents.

Line 77. 'in the context of' - bureaucrat!

Line 90. 'El Nino is no longer'. El Nino has not changed, its people's belief that has changed.

Line 96-98. The blocking effects of the islands is not a mesoscale process, although the scale of blocking and the mesoscale processes may be similar.

Line 112. 'The global degrees warming' Clumsy.

"We compare ... to ... to ..". Usually one compares one thing 'with' another.

Line 113. 'contextualise' - bureaucrat!

Line 135. 'The degrees warming' !

Line 136. ... used to quantify global warming - not global warming anomalies.

Line 144. 'averaged' Averaged over time?

'visualisation' -> plotted.

Line 156. 'degrees of warming'!! Increase in temperature?

Line 178. 'Drift in the heat budget'. In science a budget usually refers to an equation with inputs and outputs. You could say 'The net effect of changes in the heat budget was determined...

Line 181. This rewriting of an equation in words is clumsy. The reader should know what an integral sign looks like.

Line 185. 'stable through time'. Misuse of the word stable - none of

the models are expected to give infinite temperatures. What you are really comparing is the apparent long term change with the noise. In two cases the ratio is small and could be zero. In the other it is obviously non-zero.

Line 194. 'Notably'. Not needed.

Line 198. 'accounting for' clumsy.

Line 208. Multiplication signs are not usually used in equations unless indicating a vector cross product.

Line 209. Again the equation does not need specifying words, only the variables need to be defined.

Line 215-230. The python references should be replaced by references to the original papers. For SDL I think it is Cleveden 1990, for LOWEST, Cleveden 1979. The EGU journals request authors to include a link to any computer (python) code used in the analysis.

Line 300. 'as it passed' - not needed.  
'corresponding' - not needed.

Line 387. 'projected' - clumsy. Do you mean 'predicted'?

Line 566. It is not correct to say that the jets 'force' the boundary currents - as might be the case if the inertial terms in the momentum equations were larger than the pressure gradient or coriolis terms. Both the jets and the boundary currents are responses to the large scale pressure gradients modified by the local limitations in flow due to topography.