

The paper has greatly improved with this revision – specifically the writing has made the flow of ideas much easier to follow and the addition of the 1997/98 El Nino event has supported the argument that the physics were not restricted to just one event. There are still a few questions I'd like to see addressed, specifically related to model validation and ignoring the impact of radiation on equatorial temperatures.

The author validates the model with SST only, but there are many other components of the physics important for claims. Reproducing SST is only an accurate assessment of these other processes if the model captures all the physics correctly. Particularly important for the paper's claims is the model's ability to capture subsurface transport. Some discussion as to the model's ability to accurately represent the currents and their variability (or why that can't be evaluated) would be helpful.

The author claims that there isn't enough heat locally to explain warming signal – but how is that determined? It seems as though the only heat flux considered to explain warming is from ocean advection, but it is unclear why radiation cannot add heat to the equatorial Pacific. Why was this neglected when considering heat fluxes? Also, why couldn't a reduction in cold-water flux also contribute to warming? Some justification as to why only an increase in warm water flux considered would help understanding.

There is a brief discussion as to how EUC flow rates would reduce tropical instability wave generation (TIW). The authors could be more quantitative here, using the Richardson number to get a sense of how stress changes impact the instability (see Moum et al, 2009).

Minor Comments:

Page 2, Line 31: missing 'is'. Should read: "...model, it is likely that this **is** one, or possibly the main, factor..."

Page 3, Line 36: the idea of 'run 6' is introduced, but it's confusing as to why run 6 is significant. How many runs are there? What is the difference with the other runs? Is that just a name of one of the pre-run Nemo simulations?

Page 4, Line 30: atmosphere is misspelled

Page 12, Line 14: 'the' misspelled

Page 14, Line 11: typo? "...is reduced in the ocean to north **and west the west.**"

Page 14, Line 14-16: Grammar issues. Not sure if this is supposed to be one sentence of two with capitalization/verb issues: "...as it continues eastwards it has the potential to trigger deep atmospheric convection. further convection, thus moving the region of atmospheric convection steadily eastwards. "

Page 17, Line 31: Missing N: "By the end of June the annual wave at **6°**has..."

Page 26, Line 45: Repeated word: "in less dilution of the warm water **water** core of the North"