

Interactive comment on “On the Role of the North Equatorial Counter Current in Transporting Heat during a Strong El Niño” by David J. Webb

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Received and published: 9 February 2018

First I would like to thank the reviewer for reviewing the paper. This is often a thankless task but I hope that you gained something useful.

On the question of references, I really need to apologise and thank you for your list of references that I had missed. Some of them are recent but I could find only two of the earlier ones referenced, one each, in the two WOCE volumes "Ocean Circulation and Climate" edited by Siedler et al, although these contain widely quoted authoritative reviews of ocean physics and circulation.

What I think this underlines is that the role of the NECC has been neglected for too long, that it needs more work and and that it needs supporters when planning new

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research initiatives such as the US TPOS 2020 program.

Your other comments really concern style. My main problem in writing this paper was that, given the importance of the region, the theory of the NECC itself, the annual Rossby waves, Tropical Instability waves and the geostrophic inflow, was surprisingly underdeveloped in the sense that it was primarily qualitative and based on model output.

For this reason I included more on things like Stommel's theory or the discussion of the low wind region than if these had been widely discussed by others. Since submitting the paper I realise I should also have at least a couple of sentences on the atmospheric profile. In the tropics these tend to lie close to the moist adiabatic of the main convection region and it is only when rising saturated air from the Central or Eastern Pacific sea surface is warmer at all levels, that deep convection can be triggered there.

I am also trying to do three things in one paper, i.e. a model analysis and two mechanisms which I have not seen proposed before (The first being the increased transport of warm water by the NECC due to the reduction in the dilution processes and the second the triggering of a stronger than normal NECC by an enhanced annual Rossby wave).

However I take your points and will try to produce a much tighter final version.

Interactive comment on Ocean Sci. Discuss., <https://doi.org/10.5194/os-2017-99>, 2017.

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