

Topic Editor Decision: Publish subject to minor revisions (review by editor) (13 Jan 2021)
by [Katsuro Katsumata](#)

Comments to the Author:

The authors addressed appropriately all comments from both Reviewers 1 and 2.

I do not object the authors' decision to add Fig.6c and encourage authors to add the motivation ("... this is a key quantity, climatically relevant for the distribution of water masses equatorward and poleward." as stated in the authors' response) in the main text.

I would also ask authors to double-check the explanation of the term "bifurcation" at L.343 saying "...meridional transport along the coast of Australia changes from equatorward to poleward". The explanation sounds like the one for "retroflexion" (such as in Agulhas Current). Did you mean "zonal to meridional"?

We thank Dr Katsumata for his comments and careful reading.

We followed his advice. Indeed, the definition of the bifurcation may have been misleading. We are not studying the bifurcation of the western boundary current, but indeed the bifurcation of the incoming zonal SEC arriving at the coast of Australia, and partitioning into an equatorward and a poleward flow.

We changed the title of subsection 3.5. It now reads “**Variability of the EAC separation latitude and of the SEC bifurcation**”. We also modified our explanations of the bifurcation, and we hope it is now clearer:

“The latitude of the westward SEC bifurcation at the coast of Australia (ie the latitude separating waters that further flow into the equatorial system from those that feed the EAC) is an important quantity, climatically relevant for the distribution of water masses equatorward and poleward. This latitude, defined as the latitude along the coast of Australia at which the 0-1000m meridional transport changes from equatorward to poleward, is also computed...”
(lines 346-350)

L.17: Expand EAC in Abstract.

Done

L.94: Please also expand "OCCIPUT" if this is an acronym in the 1st appearance.

Done (lines 95-96)

L.130: Brankart et al. (2015) is missing in the reference list.

Added, thank you.

L.483: "punctually" here is difficult to understand.

We changed “punctually” to “locally”.