The manuscript has been improved but there are still issues which should be amended before I could recommend its publication:

L60-61: *"First, both the B-A age and B-P age are considerably older at the LGM (~20 ka) than the preindustrial period"*
"Considerably" is rather vague and should be quantified or be removed.

L82: *"This new approach of BwP age is considerably similar to the true ocean ventilation age globally"*
(1) The new approach is still unpublished, and Fig. 1 only shows that its results (but not that the various methods) are similar.
(2) "Considerably" is rather vague and should be quantified or be removed.
(3) The "true" ocean ventilation age is the "ideal" model age (IAGE).
Therefore, it would be more appropriate to rephrase, e.g., "These new BwP ages are similar to the ideal ocean ventilation tracer ages ... "

L194: *"dramatic bell shape*"
"Dramatic" should be removed.

L195-196: *"A similar bell shape pattern is also seen for the Pacific and Atlantic mean"*
There is definitely no bell shape in the Atlantic but a clear age drop near 14 ka BP.

L209-210: *" (...) the decrease in global AABW transport aligns with the increase in global mean IAGE during the same period (14–13 ka)."*
According to Fig. 1d, AABW abruptly increases between 14-13 ka BP, that is, before the age peak at 12.9 ka BP. What is the explanation for this lag?

L 274-277: *"The mean IAGE for AABW water mass increases from 836 years at the LGM to 1813 years at 14 ka due to the weakening of AABW transport, while the age of NADW increases by up to 1500 years during the period of 12–11 ka due to more NADW sinking into deeper depths in the Arctic (Fig. 2j-l), resulting in a relatively older water age for NADW and the lag of 2000 years between the maxima of Dye_NA and Dye_S (Fig. 3a-b)"*.
(1) It would be more obvious to show a time series of NADW strength which could be added to Fig 1d.
(2) How is it possible that enhanced NADW production, i.e. enhanced ocean ventilation can lead to water mass ageing?
(3) According to Fig 3b the volume of North Atlantic waters decreases between 14-12 ka. This seems to contradict more NADW sinking.
(4) I am not sure of how to interpret Fig. R3 in the author's reply to my first review. What are the units? It appears that DYE_NA at 2 km declines before the maximum of IAGE in Fig. 3a in the paper.

L333-334 (and L315 in the initial submission): *"The calculated southward DWBC and northward AABW DWBC are validated by the model MOCs, which are defined the same as in the C-iTRACE"*
You cannot validate model results with model results obtained with the same model and in the same simulation. If the results were not consistent something would be wrong.