

Authors should consider making following corrections in the manuscript:

Abstract, Page 2, line 31: Sentence should read as:

“As the two long-lived isotopes of the Radium Quartet, -----“. Both isotopes (226-Ra & 228-Ra) are not longest-lived.

Abstract, Page 2, line 49:

Which “radioactive isotopes” authors’ are referring to? Reference can be made only to Radium isotopes as used in this study. Or else, authors’ can prefer to write “radioactive tracers”.

Table 2: It appears that authors’ have not honoured their own corrections made in Manuscript Version 2. The activities of 226-Ra and 228-Ra (dpm/100L) are again given to 2nd and 3rd decimal units (25.181, 9.76, 5.28 and 1.27) in the final version.

Figure Captions 5 & 6: Are the intercept values given as 2680.9 and 3282.2 (Fig. 5) realistic? The significance of the numbers is equally important in addition to regression analysis. Likewise, the value of slope given as $-0.485x$ (Fig. 6) cannot be justified considering analytical uncertainties associated with the measured 228-Ra activity (dpm/100L).

Interactive comments from Referee #3 (Amber Annett):

Authors have not adequately revised the text in response to the following comments of the Referee #3:

General comment: *“My additional comments are that the presentation of some results could be improved to make the interpretations more immediately visible from the figures (specified below), and that providing some additional quantitative details in the implications section could enhance the impact of this manuscript.”*

Specific comment, Line 531: *“This section feels a bit unsupported; some quantification effort would deliver meaningful context for using these findings as a tool to probe impacts or vulnerability to climate change, and increase the impact of the manuscript. Some suggestions: based on 228Ra decay, what is the minimum time scale of the eastward transport of water between CAA1 and CAA6? This must make some assumptions (e.g. no additional inputs) but would provide a minimum time scale; is it rapid or slow? **What are the temperature differences between east and westward flowing waters? Where will increased heat be delivered – pumped into LS or out into Baffin Bay? Does any historical data support a strengthening or weakening of this U-turn route and what does/would that mean for transport of heat (or nutrients, or any other parameter)?**”*

Authors should address to some historical perspective in support of their results/findings as pointed out by the referee (strengthening/weakening of U-turn route and transport of heat/nutrients). Overall, conclusion/implications section needs some quantitative information with regard to time scale of water transport and temperature differences between east and west flowing waters (as per Referee’s comment).