Response to Reviewer #2:

Authors have tried to observe food uptake of two foraminiferal species from brackish water by laboratory feeding experiment with carbon and nitorogen isotopic laveling method. Though their experimental setup itself are not so novel, the method has been established to obtain the robust result. Even though the compound level isotope measurement was also possible to estimate the metabolic pathway, the current method is enough to observe uptake of nutrient into forainiferal cell. Some physical separation among cell body, taken food material and its derivatives must be necessary to do such metabolism analyses. I think these will be future topic for authors. This study succeed to show that the energy uptake and usage are variable between studied two species (Fig. 7). Double spike of carbon and nitrogen could efficiently clarify this difference. Authors' strategy is correctly functioning. I can identify this is the major finding of the study. The authors can emphasize this point with positive tone of writing. All topics, the carbon and nitrogen circulation in the tidal flats, the energy dynamics by meiofauna and metabolism of the foraminifera, are included in the scope of BG and are also acceptable to the reader with great interesting. The study should be published in BG. I would like to recommend authors put some summarized numbers, e.g. carbon and nitrogen flux of both species, in abstract and conclusion for readers' convenient.

> JW: Maximum individual values of individual carbon and nitrogen uptake per species were summarized in the conclusion of the revised manuscript.

P1Title: The authors find the variable usage of nutrient with two species. I think authors can reflect this finding on the title to increase the impact.

> JW: Title was changed: „Increased temperature causes different carbon and nitrogen processing patterns in two common intertidal foraminifera (*Ammonia tepida* and *Haynesina germanica*)."

Page 2 Line 20: Such influence of bacteria can be estimated by a control condition without foraminifera.

> JW: see response to Reviewer #1.

Page 2 Line 25: L25 "microalgae" Capitalize "m"

> JW: Revised.

Page 2 Line 35: "earth?s" Fix question mark.

> JW: Revised.

Page 3 Line 1: Could you see reproduction event during the course of experiment?

> JW: No, there was no reproduction within the course of the experiment. „The temperatures chosen for this experiment correspond to experimentally determined values that cover optimum or tolerance ranges for growth and reproduction in laboratory cultures of intertidal foraminifera (refs)" to „The temperatures chosen for this experiment correspond to experimentally determined values that cover optimum or tolerance ranges of physiological processes in intertidal foraminifera (refs)." To avoid confusion about observed factors in this study.

Page 4 Line 12: This parenthesis is not closed.

> JW: Revised.

Page 4 Line 25: Could you avoid hypoxia? Mention about the DO level even qualitatively.

JW: Information about O2 levels was added: „...measured O2 at sampling days was 5 - 8 mg L -1“

Page 4 Line 29: HgCl2, perhaps? HgCl3 replaced by HgCl2

JW: Revised. HgCl3 replaced by HgCl2.

Page 5 Fig. 1: You never measure with "unusual" individuals? Show the values if you have.

JW: No, „unusual“ individuals were never measured. They are still stored within our freezer. It would be indeed interesting, to measure those individuals for comparison. But this was not subject of this study.

Page 5 Line 6: Could you show the pictures of the individuals? The color of cytoplasm visually support to know foraminiferal uptake/digestion of algae.

JW: Unfortunately, we do not have pictures of the actual measured individuals. My microscope at that time was not equipped with a camera and I focused on swift processing of picked or frozen individuals for analysis.

Page 6 Line 6: All C and N is directly transferred from algae to foraminifera? I expect some of them is transferred via other small organisms what also eat labeled algae. I would like to recommend authors describe such all possible path of uptake.

JW: This consideration was included in the discussion.

Page 6 Line 22: Close this parenthesis.

JW: Sentence changed according to suggestion of Reviewer #1.

Page 7 Line 9: Capitalize "s"

JW: Revised.

Page 7 Line 21: Put "-" between 25◦C and 30◦C.

JW: Revised.

Page 10 Fig 4: Why Ammonia’s results are combined? Statistically identical?

JW: Yes, A. tepida results are combined, because they do not differ significantly. A clarifying comment was added to the Figure description.

Page 12 Fig 7 & Page 13 Line 27: A nice discovery. A. tepida just stored food in cytoplasm? Degradation is rapid in H. germanica? This difference between species is not revealed without 15N labeling. I can identify this is one of the key result of this study. Could you support this difference by other observation (e.g. cytoplasmic streaming, pseudopodial activities)? Include the description of observation in Result and Discussion, if so.

JW: No, we did not carry out observations on cytoplasmatic streaming or pseudopodial activity or took pictures of the specimens after the end of the incubation period. All foraminifera in the experimental dishes were carefully collected, tranferred to Eppendorf(C) tubes and frozen for further cleaning and processing. The total number of individuals needed for EA and IRMS was

not clarified at the course of the experiment, so all 150/170 individuals per replicate were stored for EA and IRMS analysis. Observations on 2700 individuals per sampling day (to observe pseudopodial movement) would have exceeded personal and time capacity. We were taking into account to transfer all individuals with the same routine, to avoid deviations of the results e.g. due to prolongued processing (further observations under the microscope for pseudopodial activity etc.). But such observations are valuable for additional prove of the data. An optional observation of random samples / preservation of individuals for additional analysis within sample series will be taken into account for further studies.

Page 15 Line 14, 15: Italicize genus name.

JW: Revised.

Page 15 Line 16: Foraminiferal flux can not explain this? I expect H. germania can quickly remineralization of carbon because the 15N:13C ratios show unproportional distribution. This may make 13C enrichment in DIC of water though the authors mentioned the influence of microbial activity. I also agree the bacterial influence, too. That would be proofed with control experiment without foraminifera in future study.

JW: Reviewers considerations were included into the discussion: „Interestingly, there is no significant temperature effect on pC between 25°C and 30°C. This implicates a critical threshold for this species between 20°C and 25°C. Above this level, the mineralization of carbon increases, as the DIC-C rises at 25°C and 30°C as a result of elevated respiratory activity. The decoupling of pC and pN in H. germanica over time supports this observation.“

About the control experiments and bacterial contamintation see answer to Reviewer #1‘s comment on Page 13.

Page 15 Line 23: Be not italicized "sp".

JW: Revised.

Page 15 Line 24: mm"2" "2" should be superscript.

JW: Revised.

Page 16 Line 6: Italicize "A. beccarii".

JW: Revised.

Page 16 Line 9: Remove "." after Fig 1.

JW: Revised.