Reply to reviewer 2:
We thank for the constructive review of the manuscript and reply to the comments below.

Reproduction of principal component scores can only be done if amino acid data are made available:
We added a Supplement with the amino acid data used for the PCA (in Mol%) as well as a supplement with bulk composition of trap data.

Water samples were collected from 14 locations, which have been discussed in various combinations or groups throughout the manuscript. It will be very helpful if somewhere in "Material and Methods" section, the basis of these combinations or groups is clarified.
We propose to add a paragraph to Materials and Methods at the end of "Sampling" which is as follows:
"The discussion of AAs is based on SPM results shown in Table 1 and AA data of plankton and sediment trap samples taken form Gaye-Haake et al. (2005) and Schäfer and Ittekkot, (1993). Bulk composition of these trap samples is shown in Supplement 1. AA spectra in Mol % of all samples used in this study are shown in Supplement 2. The discussion of nitrate assimilation and $\delta^{15}N$ of particulate matter ($\delta^{15}N_{PN}$) is based on $\delta^{15}N_{PN}$ from SPM of water samplers and in situ pumps and the available data of nitrate concentrations from Rixen et al. (2013) and $\delta^{15}N$ values of nitrate ($\delta^{15}N_{NO3}$) from Gaye et al. (2013) shown in Table 1."

Lines: 178-183: Discussion of 15N has been divided into 3 depths (<100 m, 100-150 m, >150 m), however, the basis of this division is not clear. Instrumental bias may be not significant, but what about depth effect ?
A sentence has been added here which states that variability is largest in surface waters <100m. The intervals were chosen in this summary of results because shallow samples are mostly similar and deep samples are only from two depth: one around 150m and one around 300m.

Lines 225-230: already established indicators DI and RI were examined but they yielded no meaningful information in this study. How about trying the labile OM index (LI) that was proposed by Gupta and Kawahata (2007) in Journal of Oceanography, vol. 63, pp. 695-709.
Gupta and Kawahata´s LI is based on Asp/ß-Ala and Glu/g-Aba ratios which are given in the table and show no trend with depth. As the non-protein amino acids are present only in trace amounts the LI becomes very small. We therefore think that we do not need to add the LI.

Lines 250-252: a visual comparison of the data is difficult unless some color scheme is used in the Fig. 5, or preferably some statistical method be used to highlight the difference in AA compositions in SPM and sinking particles.
We used colors for Fig. 5 (now Figure 4).

Lines 293-307: sorption of AA and OM on particles is a tempting process for explaining the observed variations in the AA composition. However, no experiment was conducted by the authors to examine the sorption directly. So the conclusions mentioned in this section remain speculative, and should be verified by detailed experiments in future.

Yes, we agree and also mentioned the necessity of further investigations at the end of the Conclusion.

Lines 340-348: although the equations are provided, it is not clear how instantaneous product differs from accumulated product in terms of nitrogen isotope. If this difference is too small, it may lie well within analytical error range.
Both curves based on the isotopic effect derived from this data set are shown in Figure 6. The instantaneous and accumulated products are similar at low f values but become more different as nitrate is being used up. The analytical error of d15N is less than 0.2‰ so that it is justified to differentiate between the instantaneous and accumulated product (see Figure 6).

Lines 363-364:15N of sinking particles is not immediately clear in the Fig. 7.
Changed: the range of sinking particles in Figure 7 (now Figure 6) has been clearly marked.

Line 373: it will be good to specify in which month or season or monsoon, productivity is high.
Done: The respective months of the studies have been mentioned.

Amino acid was abbreviated as AA in the abstract and in line 152, but the term "amino acid" was used frequently, which can be avoided by using the abbreviation AA through out the manuscript.
Changed

Line 108: replace SW by southwest (SW) *Done*
Line 133: replace Organic carbon (POC) by Particulate organic carbon (POC) *Done*
Line 155: replace remaining acid by unreacted HCl *Done*
Line 157: insert AA between individual and monomers *Done*
Line 188: delete between 27 and 597 g l-1 *Done*
Line 189: delete respectively *Done*
Line 200: delete organic *Done*
Line 224: correct -Al as –Ala *Done*
Line 365: delete processes *Done*
Line 367: insert space, 1996).In ⟶ 1996). In *Done*
Line 378: change appears to appear *Done*
Line 403: change Water to waters *Done*

Lines 703-706: avoid units to simplify the text. Units are mentioned in the table.
Done

Line 728: change samples to samplers
Done

Lines 723-733: avoid units to simplify the text. Units are mentioned in the Figs.
Done

Table 2: important AA, loadings and scores should be shown in bold font
The factor scores have been sorted so that highlighting samples is not required.
Some of the loadings such as Ser or Asp could be shown in bold. However, we think

that Figure 5 shows the relevance of the loadings of amino acids clearly so that marking some of them in the Table would not add more information.

Fig. 1: Make station numbers more prominent by using larger font or different color
Done

Fig. 2b: x-axis title, change from organic carbon to particulate organic carbon
Done

Some references have been listed as et al. (lines, 493, 511, 513, 516, etc.). These should be mentioned in accordance with the BG format of references.
Done