

*Global Biogeochemical Cycles*

Supporting Information for

**Nitrate supply routes and impact of internal cycling in the North Atlantic Ocean inferred from nitrate isotopic composition**

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Figure S1

**Additional Supporting Information (Files uploaded separately)**

Caption for Table S1



Figure S1. Evolution of (accumulated) product δ18O (‰) associated with the degree of NO3- consumption using both the Rayleigh model (black lines) or the steady-state model (green lines) compared to regenerated NO3- δ18O (grey dashed lines; being H2O δ18O +1.1 ‰ with H2O δ18O ranging from 0 to 0.5 ‰). Ranges of produced δ18O (‰) is given for both models (dotted lines) using isotope effects being 5 ± 0.5 ‰ and initial NO3- δ18O varying from 1.5 to 2.5 ‰. In high-latitude areas, partial consumption of NO3- lead to an increase in NO3- δ18O since regenerated NO3- δ18O is higher than exported product δ18O (‰). In low-latitude areas, complete consumption of NO3- leads to a decrease in NO3- δ18O since regenerated NO3- δ18O is lower than exported product δ18O (‰).

Table S1. (.xlsx file) provides all nitrate concentration ([NO3-]; µmol l-1) and isotopic composition (NO3- δ15N and NO3- δ18O; ‰) data presented in the manuscript.