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**Data of continuous incubation experiments with denitrifying bacteria, *Pseudomonas fluorescens* (producing and reducing N<sub>2</sub>O) and *Pseudomonas chlororaphis* (only producing N<sub>2</sub>O).**

Please cite as:

Winther, M., Balslev-Harder, D., Christensen, S., Priemé, A., Elberling, B., Crosson, E., and Blunier, T.: Continuous measurements of nitrous oxide isotopomers during incubation experiments, *Biogeosciences*, 15, 767-780, 10.5194/bg-15-767-2018, 2018.

**Datafiles:**

Column 1: Experimental time (minutes)  
Column 2: N<sub>2</sub>O concentration (parts per million)  
Column 3:  $\delta^{15}\text{N}_{\text{alpha}}$  of N<sub>2</sub>O (‰)  
Column 4:  $\delta^{15}\text{N}_{\text{beta}}$  of N<sub>2</sub>O (‰)  
Column 5:  $\delta^{15}\text{N}_{\text{bulk}}$  of N<sub>2</sub>O (‰)  
Column 6:  $\delta^{15}\text{N}_{\text{SP}}$  of N<sub>2</sub>O (‰)

**Data files for *Pseudomonas chlororaphis***

Data-PChlororaphis-Corrected # A.txt (Figures 3, 4, 5, supplemental figures 1.5.x)  
Data-PChlororaphis-Corrected # B.txt (Supplemental figures 1.5.x)  
Data-PChlororaphis-Corrected # C.txt (Supplemental figures 1.5.x)  
Data-PChlororaphis-Corrected # D.txt (Supplemental figures 1.5.x)  
Data-PChlororaphis-Corrected # E.txt (Supplemental figures 1.5.x)

**Data files for *Pseudomonas fluorescens***

Data-PFlourescens-Corrected # A.txt (Figures 3, 4, 6, supplemental figures 1.6.x)  
Data-PFlourescens-Corrected # B.txt (Supplemental figures 1.6.x)  
Data-PFlourescens-Corrected # C.txt (Supplemental figures 1.6.x)  
Data-PFlourescens-Corrected # D.txt (Supplemental figures 1.6.x)  
Data-PFlourescens-Corrected # E.txt (Supplemental figures 1.6.x)  
Data-PFlourescens-Corrected # F.txt (Supplemental figures 1.6.x)  
Data-PFlourescens-Corrected # G.txt (Supplemental figures 1.6.x)

**Rayleigh model output:**

Column 1: N<sub>2</sub>O concentration (parts per million)

Column 2:  $\delta^{15}\text{N}_{\text{alpha}}$  of N<sub>2</sub>O (‰)

Column 3:  $\delta^{15}\text{N}_{\text{beta}}$  of N<sub>2</sub>O (‰)

Column 4:  $\delta^{15}\text{N}_{\text{bulk}}$  of N<sub>2</sub>O (‰)

**Model output for *Pseudomonas chlororaphis***

Data-PChlororaphis-Model # A.txt (Figures 4, 5, supplemental figures 1.5.x)

Data-PChlororaphis-Model # B.txt (Supplemental figures 1.5.x)

Data-PChlororaphis-Model # C.txt (Supplemental figures 1.5.x)

Data-PChlororaphis-Model # D.txt (Supplemental figures 1.5.x)

Data-PChlororaphis-Model # E.txt (Supplemental figures 1.5.x)

**Mode output for *Pseudomonas fluorescens***

Production part:

Data-PFlourescens-Model-Production # A.txt (Figures 4, 6, supplemental figures 1.6.x)

Data-PFlourescens-Model-Production # B.txt (Supplemental figures 1.6.x)

Data-PFlourescens-Model-Production # C.txt (Supplemental figures 1.6.x)

Data-PFlourescens-Model-Production # D.txt (Supplemental figures 1.6.x)

Data-PFlourescens-Model-Production # E.txt (Supplemental figures 1.6.x)

Data-PFlourescens-Model-Production # F.txt (Supplemental figures 1.6.x)

Data-PFlourescens-Model-Production # G.txt (Supplemental figures 1.6.x)

Reduction part:

Data-PFlourescens-Model-Consumption # A.txt (Figures 4, 6, supplemental figures 1.6.x)

Data-PFlourescens-Model-Consumption # B.txt (Supplemental figures 1.6.x)

Data-PFlourescens-Model-Consumption # C.txt (Supplemental figures 1.6.x)

Data-PFlourescens-Model-Consumption # D.txt (Supplemental figures 1.6.x)

Data-PFlourescens-Model-Consumption # E.txt (Supplemental figures 1.6.x)

Data-PFlourescens-Model-Consumption # F.txt (Supplemental figures 1.6.x)

Data-PFlourescens-Model-Consumption # G.txt (Supplemental figures 1.6.x)