

## ***Interactive comment on “The Holocene sedimentary record of cyanobacterial glycolipids in the Baltic Sea: Evaluation of their application as tracers of past nitrogen fixation” by Martina Sollai et al.***

**Prof. Conley**

daniel.conley@geol.lu.se

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I just have two brief comments regarding this manuscript.

1) It appears that the  $15\text{N}$  samples were acidified before measurement, which has been shown in the literature to result in anomalous values. If you compare their  $15\text{N}$  data with other data from the Baltic Sea from a variety of groups their data show very little variation through time especially during hypoxic periods.

2) The HG data also show a different picture than what has been observed with pigment

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biomarkers for cyanobacteria in the Baltic Sea. Funkey et al. (2014) – is referenced, but not discussed - showed increased cyanobacteria abundance during period of hypoxia likely due to changes in the biogeochemistry of P during low oxygen periods.

I think more needs to be done to assure the validity of the  $^{15}\text{N}$  measurements and other proxies should be measured and compared to validate the HG data.

Daniel Conley, Department of Geology, Lund University

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