

Review of “Evidence of high N₂ fixation rates in productive waters of the temperate Northeast Atlantic” by Fonseca-Batista et al.

The editor should understand that neither N fixation, N-fixing gene abundances, nor bioecology are within my realm of expertise. Despite that, I have sailed on many research cruises with N-fixation scientists, and even collected nifH samples for them on my own cruises. So I should be classified as a knowledgeable non-expert: I appreciate the research area but cannot analyze or critique details.

From that perspective, the paper is a fine contribution, calling attention to high N fixation rates and relatively high N-fixing gene copies in the temperate eastern Atlantic in the springtime following the spring bloom. This has not been observed before, partially due to methodological issues and partly due to the lack of observations in this season. Obviously it may change our view of how to assess global N fixation rates and how to model them.

I could only find a couple of small issues with the text (noted below), otherwise I believe it can be published with only minor revisions, hopefully with more guidance from a reviewer expert in this field.

(1) p. 1, line 31: For the sake of clarity, I recommend modifying the text to “At the sites where N₂ fixation activity was the highest, we recovered sequences affiliated to UCYN-A1 (obligate symbiont of eukaryotic preymnesiophyte algae).”

(2) p. 5, line 161: the Ambar and Fiúza, 1994 paper is not in the list of references.