

Interactive comment on “Aphotic N₂ fixation along an oligotrophic to ultraoligotrophic transect in the Western Tropical South Pacific Ocean” by Mar Benavides et al.

L. I. F. Falcon (Referee)

falcon@ecologia.unam.mx

Received and published: 22 January 2018

In this research paper, Benavides et al., make a very solid contribution to current knowledge of N₂ fixation rates, N₂-fixer diversity, and overall parameters associated to aphotic regions of the oceans. The research presented is excellent in all its aspects—introduction, MM, results and discussion are solid, straightforward, and present data produced with state-of-the-art technologies. Although local N₂ fixation rates are low compared to some photic environments, they were constantly found along the sampling gradient reported, and integrated rates suggested in this research can consist of up to ~50% of surface rates. I believe this is one of the main contributions of this

Printer-friendly version

Discussion paper



research. A second main contribution is the finding of *V. diazotrophicus* related phylogenotypes dominating at the 650 dbar depth, associated to SAMW- which suggests a relationship between *nifH* diversity and a large-scale water mass. Further, the results on *Trichodesmium* diversity found in the aphotic layers, suggesting the effect of large cyanobacterial bloom sinking, is also very relevant to understand the N cycle.

Interactive comment on Biogeosciences Discuss., <https://doi.org/10.5194/bg-2017-542>, 2018.

BGD

Interactive
comment

Printer-friendly version

Discussion paper

