

Interactive comment on “Perspectives of the microbial carbon pump with special references to microbial respiration and ecological efficiency” by H. Dang and N. Jiao

Anonymous Referee #1

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The title of the article enticed me to agree to reviewing this manuscript. However, I had great difficulty maintaining any interest in this information-rich paper because the authors provided so much extraneous material that was only marginally related to the central theme. The topic is timely and important to microbial oceanography, but the authors fail to explore it in a logical, readable and compelling way. To detail all the shortcomings of this paper would take me more time than I have available. I will however list a few items I found problematic. If the topic were less important, I would recommend rejection rather than major rewrite. I think all the required information and analysis is already contained in this manuscript, BUT it is buried under a mountain of nearly irrelevant facts and poor English grammar. Authors should work with a native

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English speaker on the revision.

Selected comments: 1. Title: should be "Perspectives on..." not "of" 2. Abstract and many places elsewhere. - "related to energy production efficiency" Point of fact, cells do NOT "produce" energy. They capture, transform, conserve, store, consume, and lose energy, but they do not produce energy! They participate in the flow of energy through ecosystems, but that energy is produced by solar, geothermal and geochemical processes. 3. line 11. "on a per cell basis" or "on a per capita basis" 4. line 12. comment on anoxic systems seems to confuse cause and effect 5. lines 13-14. "different in mechanical efficiency" What on earth does this mean?? 6. line 15. "Typical cases.." of what? 7. line 23. "..is altered.." "..is redirected.." might be more accurate. 8. line 25. should be "..would have negative impacts on.." 9. Intro, pg. 1482 - line 24. cytochrome aa3 oxidase is not a "terminal electron acceptor" 10. line 29. "nitrogen oxy-anions and nitrogen oxides" specifically referring to ?? 11. pg. 1483. lines 1-8. totally jumbled. Cannot follow meaning of this 12. pg. 1484, line 15. "ATP biosynthesis" a common misnomer. Authors actually mean "ATP phosphorylation" and more precisely "ADP phosphorylation" 13. line 26-27. seems redundant of earlier text 14. Section 2.1. Most, if not all, of this section seems totally off topic, i.e., irrelevant to central theme.

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