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Title: Response of tropical marine benthic diatoms exposed to elevated irradiance and temperature
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DEAR ANINDA, PLEASE FIND IN THE FOLLOWING MY CRITIC AND RECOMENDATION ON THE ASIGNED PAPER.
MY OPINION IS THAT: THIS MANUSCRIPT HAS GOOD POTENTIAL IN TERMS OF ECOPHYSIOLOGICAL ECOLOGY AND SHOULD BE EVENTUALLY PUBLISHED. HOWEVER, IT HAS TO BE MODIFIED ACCORDING TO THE OBSERVATIONS I HAVE LISTED BELOW.

TITLE: Response of tropical marine benthic diatoms exposed to elevated irradiance and temperature

SEEMS IMPRECISE...TRY:
TOLERANCE/STRATEGIES OF TROPICAL BENTHIC DIATOM ASSEMBLAGES TO HIGH IRRADIANCE AND TEMPERATURE
IT CORRESPONDS MUCH BETTER WITH THE DERIVED CONCLUSION

Abstract.
LINE 12 Shallow tropical marine environments are likely to experience future water temperatures that will challenge the ability of life to survive.
FUTURE RISE IN WATER TEMPERATURE? HOW FAR INTO THE FUTURE….15 YEARS (NOW)?
THIS PREMISE LACKS SCIENTIFIC OR PHILOSOPHICAL (LOGIC) BASIS

Changes in temperature and irradiance during tidal cycles in the Tanjung Rhu estuary, Langkawi,Malaysia in 2007 did not significantly affect the benthic diatom communities
NOT COMMUNITIES BUT TAXOCENOSES. WHAT TYPE OF CHANGES WERE EXPECTED?

LINE 22 These characteristics suggest that the benthic diatom communities in this estuary are already suffering from thermal damage
IN GENERAL IT CONTRADICTS ADAPTATION PRINCIPLES THAT DRIVE EVOLUTIONARY ECOLOGY, INASMUCH THE SURVEYED DIATOM ASSOCIATIONS ARE ADAPTED. THUS THE FOLLOWING SENTENCE LOOSES MEANING
and that enhanced photoinhibition would result if exposed to elevated temperatures, especially during low tide. 50 °C is apparently a temperature threshold for tropical 25 estuarine **??** benthic microalgal communities.
NOT A CLEAR SENTENCE...
Future warming is likely to cause this temperature to occur more frequently, which will cause a reduction in benthic primary production
TO MUCH CONFIDENCE ON THE GLOBAL HYPERWARMING EXPECTATIONS MAKE THIS CONCLUDING REMARK OUT OF PLACE (DISCRETE DATA CONTRADICTING ECOLOGICAL PLANETARY EVOLUTION)

INTRODUCTION
LINE 65 2005; Underwood, 2002). However, there are relatively few studies of benthic diatoms in tropical estuaries (Patil and Anil 2008). Although the photosynthesis of tropical benthic diatoms is likely to be highly sensitive to elevated temperature,comparatively little attention has been given to the combined effects of both elevated light and temperature. Water temperatures in tropical

marine ecosystems are already high and relatively small increases can have severe negative impacts. Intertidal and subtidal communities are particularly vulnerable and increasing temperatures, resulting from global warming, will have unpredictable consequences.
LINE 70 This study examines the impact of high light and temperature as temperatures increase. These conditions are predicted to worsen with the increase in seawater temperatures resulting from climate change.

A STUDY SUCH AS THIS CAN NOT DO WITHOUT A HYPOTHESIS. I SUGGEST TO MAKE IT EXPLICIT ON THE BASIS OF, HOW DO BENTHIC DIATOMS FROM TROPICAL SHOW ADAPTATIONS TO HIGH TEMPERATURE AND IRRADIANCE. PLEASE FORGETT ABOUT GLOBAL WARMING, WHICH BESIDES BEING A SWINDLE (HARSH DISCUSSION) IT REFERS TO PLANETARY ECOLOGY AND THE RELATION WITH YOUR STUDY IS VERY REMOTE-
JUST KEEP IT ECOPHYSIOLOGICAL, IT HAS A VLUE OF ITS OWN

MATERIAL AND METHODS
LINE 80 mangrove forest, mainly dominated by Rhizophora and Avicennia species. The benthic habitat is mostly composed of coarse sand with patches of mud. The water normally carries a high-suspended load, originating partly from the mangrove forest and from the river sediment itself. To gain a better understanding of the surrounding environment, samples were collected in April 2007 from three sites (Sites A, B and C) all in proximity (20 meters) to the intertidal zone of the Tanjung Rhu Estuary, during both high and low tide.
HIGHLIGHTED SENTENCE IS VAGUE. SHOULD BE ERASED OR EXTENDED WITH PRECISE DESCRIPTION OF HOW A SUCH A BETTER UNDERSTANDING IS PURSUED.
ALSO, SAMPLES FROM 2007? AN EXPLANATION FOR THIS ASYNCHRONY IS REQUIRED

LINE 85 Description of sites A, B and C are provided in Table 1. Environmental data (salinity, temperature) and photosynthetic parameters were collected at ebb and flood tide. Water height at ebb tide was approximately 0 to 0.2 m and 0.5 to 1 m at flood tide. On each occasion, seven 15 mm diameter hand-pushed sediment cores were taken; three for photosynthetic parameter analysis, three for chlorophyll a analysis and one for species composition. For the temperature incubation experiments, the top 10 mm (approximately) of the sediment was manually scraped off

LINE 90 and placed in a dark plastic bag (20 x 90 20 cm). Samples were stored in the dark and promptly returned (approximately 15 min) to the laboratory for the experiments.
At each sampling site, water quality measurements (temperature, salinity, and photosynthetically active irradiance (PAR) were measured using a Hydrolab Datasonde 4a (Hach, Loveland CO). Water samples for all parameters and nutrient analyses were collected during high tide (water level: 1.0 m) and low tide (water level: 0.2 m).
IT APPEARS REPEATED, HOWEVER YOU ARE REFERING TO HYDROLOGICAL VARIABLES, NOT TO WATER QUALITY WHICH INDICATES POLLUTION DEGREE

METHODS
LINE 199 STATE IF DATA WERE TESTED FOR HOMOSCEDASTICITY AND NORMAL DISTRIBUTION BEFORE APPLYING PARAMETRIC STATISTICAL TESTS, AND IF SO, WHAT TEST WAS USED

RESULTS
ACCORDING TO WHAT IT IS READ IN (METHOD) ON COMMUNITY COMPOSITION (LINES 100-110), WHAT IT IS PRESENTED AS RESULT:
(LINE 195) The diatom genera Cocconeis, Navicula and Rhopalodia dominated the benthic habitats, which predominantly consisted of course sand with mud/silt patches. The sediment characteristics were similar among the sampling sites. The most common species found were Cocconeis placentula, Navicula raphoneis, Navicula clipeiformis and Rhapalodia acuminatea. The composition of the diatom communities

at all sites and tides were similar without any differences in dominant species.
IS NOT BASED ON PRESENTED EVIDENCE, SUCH AS SPECIES LIST, IMAGES, RELATIVE ABUNDANCES SIMILARITY MEASUREMENTS
HENCE, IT WOULD BE ADEQUATE TO REMOVE ANY PARTICULARITY ON COMMUNITY ANALYSIS, BOTH IN METHOD AND RESULTS
I SUGGEST TO FURTHER WORK SAID DATA ON DIATOMS AN TRY TO PUBLISH INDEPENDENTLY

LINE 206 The highest nutrient levels were recorded during high tide, when seawater re-entered the estuary (Table 2 and Table 4(a)) There was a least a 50% increase in nitrate and phosphate levels during high tide, although the changes were not significant (Table 2).
MAYBE BECAUSE THE STATISTICAL TESTS USED (PARAMETRIC) WERE NOT APPROPIATE?

DISCUSSION
LINES 240-258 DO NOT PRESENT ANY INFERENTIAL CONTRIBUTION (THEORY); MOST LIKELY BECAUSE NO WORK WAS DONE ON A MOST NEEDED HYPOTHESIS

LIKEWISE
LINES 260-285 WOULD DO BETTER CONTRASTING A HYPOTHESIS AND NOT JUST COMPARING WITH OTHER STUDIES, WHICH HAS TO BE DONE WHEN STATING THE PROBLEM/HYPOTHESIS

LINES 286-389 I FEEL ARE ON THE RIGHT TRACK IN TERMS OF ECOPHYSIOLOGICAL STRATEGIES THAT EXPLAIN THE PERMANENCE AND ABIDENCE OF DIATOM POPULATIONS UNDER THESE CONDITIONS

LINE 390 DIATOMS ARE NOT PLANTS!

CONCLUSION
I FIND CONCLUSION WELL DERIVED, BUT IN AGREEMENT WITH THE ECOPHYSIOLOGICAL STRATEGY VIEW OF DIATOMS, AND NOT IN THE TERMS THAT I HAVE OBSERVED WHICH SHOULD BE AVOIDED GLOBAL WARMING OR BYPASSING THE FACT THAT DIATOM POPULATIONS ARE WELL ADAPTED TO EXTREME CONDITIONS, WHETHER TROPICAL AS THESE OR IN DESERT SABKAHS.
HOWEVER, THE STARTING SENTENCE SHOULD BE ELIMINATED:

LINE 405 While the data presented herein demonstrates the response of tropical benthic diatoms to high irradiance and extreme temperature, the use of RLC data alone prevents a more rigorous examination of non-photosynthetic quenching activities such as the xanthophyll cycle (Cartaxana et al., 2013). Nonetheless,