Interactive comment on “Light-dependent calcification in Red Sea giant clam *Tridacna maxima*” by Susann Roessbach et al.

Anonymous Referee #1
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The manuscript investigates a common yet little known question on the light-dependency of iconic giant clams. Using experiments, Authors were able to show interesting results that showed congruence to the species’ natural depth distribution. Some explanations were provided regarding their results, but I think there is scope to expand their Discussion (e.g. how symbiont species may play a role in affecting depth distributions and affect calcification). The current manuscript depth peer review, as well as to provide more details on the mechanism of light-induced calcification and why there is a maximum light threshold before calcification rates drop could be further expounded.

Specific comments:

C1

Abstract, Line 8: Tridacninae is the subfamily for giant clams. Please amend the first sentence.


Discussion, Section 4.2: Suggest Authors to refer to LaJeunesse et al., 2018 (Systematic Revision of Symbiodiniaceae Highlights the Antiquity and Diversity of Coral Endosymbionts) and symbiont-related papers on giant clams (e.g. DeBoer et al., 2012; Ikeda et al., 2017; Lim et al., 2019), and make inferences on how symbiont species may affect depth distribution with respect to light. References: DeBoer TS, AC Baker, MV Erdmann, Ambariyanto, PR Jones & PH Barber (2012) Patterns of Symbiodinium distribution in three giant clam species across the biodiverse Bird’s Head region of Indonesia. Marine Ecology Progress Series 444: 117-132. Ikeda S, Yamashita H, Kondo S-n, Inoue K, Morishima S-y, Koike K (2017) Zooxanthellal genetic varieties in giant clams are partially determined by species-intrinsic and growth-related characteristics.