In response to Referee #4:

the supposed weaknesses underlined in the comments have been addressed as explained in the following lines (red colour).

- Line 24: When selecting papers, cite only the earliest papers identifying these global changes and the most recent ones like advanced IPCC reports.

We modified the citations as suggested.

Lines 40 - 57: The authors could be much more synthetic, summarizing this in a few lines and especially referring only to review articles (Foster, De Carlo, etc.) as well as the latest advances on the reconstruction technique of carbonate chemistry...

The section was shortened, and the review articles have been added in the revised version. The discussion about "the latest advances on the reconstruction technique of carbonate chemistry" is beyond the aim of this paper, which is focused on the investigation of possible temperature and growth rate effects on B/Ca.

Line 57: Not so recent ....

The sentence has been removed and the introduction has been synthetized.

Lines 59-61: what is the interest of this paragraph for this study ?

The idea was to provide an overview of the mechanisms of B incorporation in marine carbonates, but the removal of this sentence does not hamper the significance of the introduction, therefore we removed it.

Introduction - Rather than redoing a history on boron, from my point of view the introduction should have been oriented on the response of the SST and carbonate chemistry proxies according to the type of materials studied, calcite or aragonite and finally yes the little knowledge concerning the bio-carbonates in Mg-Calcite

This would surely be an interesting topic to discuss in another paper, but what you proposed would not be significant for this work, which is specifically devoted to Mg-calcite coralline algae and their incorporation of boron.

Lines 81-82: What is this debate?

The two previous sentences refer to papers with opposite conclusions about the controls on B incorporation (Donald et al., 2017 and Anagnostou et al., 2019). The debate clearly refers to this.

Can we really use Mg-calcite organisms ? Such questions have to be developed in the introduction

The answer will come after grouping the results of several researchers working on different groups. It is exactly the issue addressed in this paper, limitedly to one species of coralline algae, in order to exclude possible odd comparisons coming from species-specific vital effects.

Line 139: in general the authors have to be more precise .... Which laser ???? Line 145: Not clear. higher ???? How much ???? or lower .. please indicate the analytical uncertainties for each isotope/element analysed

The producer has been added, but the characteristics of the instrument were already given. More details about the instrument precision have been given as suggested.

Line 201: the authors have to be less qualitative... Please be more quantitative

A previous revision was asking for eliminating the numbers from this section, because they are quantitatively presented in the cited Table 1. We therefore already provided all the quantitative results.

Line 318: Not only... Geographical locations can play a role too on delta T

We modified the text accordingly.

Line 323: But how much is reliable ?

We provided data and treated them in order to test their statistical significance. Our data are reliable, “how much” is defined by statistics. See section 3.2.

Lines 328-330: But why the authors did not the tests and calculations of the interest of a multi-proxy approach ??? Need to be develop in this study

We tested the 3 proxies mentioned, and the results are presented in Section 3.2. No modification was needed here.

Line 350 and along the discussion: in general many assumptions in this study without solid arguments

No precise comment or criticism is expressed here, providing no effective suggestion for implementation.

Discussion: Why do the authors never discuss the potential role of the organism in up-regulating the carbonate chemistry of their internal calcifying fluid (here CO32-) and consequently the growth parameters, here the linear extension... I am really not convinced by the discussion presented here and the fact that the authors ignore all the recent works on these geochemical processes.

All the papers related to coralline algae (and not only) have been considered in our discussion. The physiology of a possible up-regulation in the calcifying fluids in coralline algae is a topic for further research and different approaches, that are beyond the scope of this contribution.