

Interactive comment on “A new approach for assessing climate change impacts in ecotron experiments” by Inne Vanderkelen et al.

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Received and published: 28 October 2019

Dear Dr. Vanderkelen,

it has been extremely difficult to find reviewers for your manuscript, so to make some progress at this point I have decided to provide a review myself.

For several decades controlled environment facilities have been a key approach for studying effects of climate change on plants and small stature ecosystems, and since the 1990ies ecotrons and their application have been repeatedly described (e.g. Lawton et al. 1993 and 1996, Griffin et al. 1996). There is no doubt that phytotrons and ecotrons are state-of-the-art tools, whose technical capacities, including the controlled volume and the precision, have increased tremendously during the past 15 years. Such

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infrastructures provide an outstanding possibility to test for individual and interactive effects of multiple global change drivers, and / or to simulate specific scenarios projected by climate models, and there is no doubt that studies based on ecotrons will yield major novel scientific insights. However, from my perspective there is only limited novelty in the description of the facility itself. For this reason, such descriptions have previously been included in the supplements of papers reporting on the actual outcome of the climate manipulation experiments performed (e.g. Arnone et al. 2008, Roy et al. 2016).

From my own background I cannot judge the degree of novelty contained in your new methodology for generating climate forcing using a single Regional Climate Model Simulation, which is one of the reasons why I sent your manuscript out for review. One of the experts on the topic, who I trust, declined my invitation to review your manuscript with the comment "This paper does not look very interesting to me - it merely describes the plan to regulate controlled environments following some very specific climate change predictions."

Taken together, I am therefore not convinced that your manuscript is advancing the field to a sufficient extent to be acceptable for publication as a full paper in Biogeosciences. I may nevertheless revise my opinion in case you manage to convince me otherwise in your author responses.

Best regards,

Michael Bahn (Editor)

Interactive comment on Biogeosciences Discuss., <https://doi.org/10.5194/bg-2019-267>, 2019.

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