

## ***Interactive comment on “Mathematical modelling of positive carbon-climate feedback: permafrost lake methane emission case” by I. A. Sudakov and S. A. Vakulenko***

**N. Zeng (Editor)**

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Both reviewers have very serious concerns. Please address all the questions raised. Additionally, please pay special attention to the following:

1. The detachment of the mathematical work in the paper from the real world permafrost lake is significant, as pointed out by Reviewer 1. Significant work will be required to Link real world to your model. One way is to find a field scientist as a collaborator. In your revised article, please address what aspects of the real world, e.g., as described by Reviewer 1 are represented, what are approximated, and why your approximation is a good one.

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2. Given the mathematical focus of the paper, it's very unfortunate that major mistakes were present. Please ensure the accuracy in your revision. You may consider using notations that are more familiar to the Earth science community.

3. Please discuss thoroughly your work in the context of other similar mathematical modeling of permafrost lakes.

4. You may also want to address how your work might be used to improve the representation and parameterization of permafrost in global carbon cycle models.

-Ning Zeng, Editor

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