

Interactive comment on “Methane and carbon dioxide emissions from 40 lakes along a north–south latitudinal transect in Alaska” by A. Sepulveda-Jauregui et al.

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I like the manuscript. It is rather bare (without emotions) with minimum of discussions. The work is very usefull. I know how it is difficult to manage the work - to measure CH₄ and CO₂ fluxes from the number of lakes both in summer and in winter. Many years ago, I tried to do this work on Kolyma lowland from Arctic cost to taiga area. The authors have done the work much better than we had done. The received results looks very probable. Unfortunately, yedoma on Alaska exists fragmentary. The authors were not able to show dependency of methane flow on temperature (latitude). According my experience I can note that the dependency is more strong for diffusive flow than for

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bubbling. The authors experimentally have confirmed that fact that yedoma is important factor of the methane global budget. That is the main result of the work. Their data support that the permafrost (yedoma)thawing could be a main factor of atmospheric methane rising during Pleistocene-Holocene transition and can be important methane source in nearest future. Data of gas rate dynamic in lakes is also important for understanding hydrobiota distribution. For example, to the northward fish in lakes are more sensitive to low concentration of oxigene and high concentration of methane.

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