Earth Syst. Dynam. Discuss.,
https://doi.org/10.5194/esd-2018-20-RC1, 2018

Earth System Dynamics
Discussions

Interactive comment on "Dynamics of finite causal processes" *by* Kalman Ziha

Anonymous Referee #1

Received and published: 15 May 2018

REJECT

This manuscript attempts to apply the concepts of the 'general systems theory' (GST) of Ludwig von Bertalanffy to explain changes of the physical climate physical, in particular the causal relationship between 'finite ice melting' (the cause M) and 'ice mass Losses' (The effect). The 'general systems theory' of Ludwig von Bertalanffy is a holistic, controversial theory, started in 1938, that may qualitatively explain some phenomena in ecology and social sciences but is far from being accepted as a science subjected to verification and falsification. Moreover, it presents a simplistic theory of the linear feedback which comes out as a very particular case of the much more general and well-grounded and mathematically funded 'Control system's theory'. The application of GST formalism to the relationship between 'Finite ice Melting' and 'ice mass Losses' seems therefore inappropriate giving rise to 'vague' concepts without any physical correspondence. Examples of that are quoted from the manuscript:

1) 'This study of finiteness of natural processes recognizes the temporal FCEI (Finite Cause-and-Effect Interaction) empirical concept as a continuous sharing of irreplaceable and restricted overall ultimate causal capacity CU between the observable elapsed effect E in the past and the imperceptible but conceivable forthcoming limited exhaustible cause C beyond the instant of observation in the future.

2) The trans-temporal finite interaction implies the empirical link in continuation of the known uninterrupted past and the imaginable but finite perpetuating future separated by the instant of observation at the present time'

3) The mathematical model of the FCEI in this study considers a simple intuitive term of the continuous residual causal capacity R(C) after spending some primary effect E'(C) (1) of the limited cause C on the expense of the ultimate cause CU.

Beyond the above criticisms, the author tries to make millenary climatic predictions (extrapolations) using the simplistic GST relationships, as quoted from the manuscript:

'It is possible to predict by extrapolating the FMLI ice mass loss curve (28) that the melting out of the total mass of ice MU= 2.50 x 106 Gt due to the interaction with climate change under same environmental conditions could happen in the year TM=2850ïĆś70 with 8% uncertainty of ultimate ice mass MU estimation (Figs. 3 and 4)'.

That prediction is totally speculative and cannot be accepted.

Moreover, the author does totally ignore alternative approaches studying the causality in the climatic system (e.g. Granger causality) and therefore it is not understood in which the manuscript adds new knowledge.

Giving the above arguments, the manuscript must be rejected and cannot be accepted to 'Earth System Dynamics' journal.

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