

Interactive comment on “A User-friendly Earth System Model of Low Complexity: The ESCIMO system dynamics model of global warming towards 2100” by J. Randers et al.

Anonymous Referee #2

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Review of the manuscript entitled “A User-friendly Earth System Model of Low Complexity: The ESCIMO system dynamics model of global warming towards 2100” by J. Randers et al.

The manuscript discusses the formulation of simple system dynamics model ESCIMO, Earth System Model of Low Complexity which can be run on laptop computers. This is a simpler and computationally inexpensive model and can be used by the policy makers and experts. The response of the climate to various policy interventions for reducing future global warming is discussed in the manuscript. The results presented in the paper are encouraging, but need further testing and analysis before it can be made available for making policy decisions. A through comparison of the model results

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is needed, especially with all the RCP scenarios of CMIP5 is necessary to evaluate the model performance. The details about the base run, the forcings used for the base run and its performance is very much necessary. The forcings are discussed as “The simple ESCIMO model structure, when parameterized with plausible parameter values obtained from the literature or common sense, and driven by actual man made emissions of greenhouse gases from 1850 to 2015. . . The future portion of these graphs is generated by ESCIMO with what we see as the most likely man made emissions from 2015 to 2100”, is not justifiable. The global mean fields shown for the base run (Fig. 5) show a steady increase till 2070 and then a decrease in temperature and other fields. The base run also show GHG emissions sharply decrease after 2040, all these needs clarification. The model performance matrix depends on the base run characteristics, which need refinement before assessing the policy interventions for reducing global mean temperature.

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