

Atmos. Chem. Phys. Discuss., referee comment RC1
<https://doi.org/10.5194/acp-2022-852-RC1>, 2023
© Author(s) 2023. This work is distributed under
the Creative Commons Attribution 4.0 License.

Comment on acp-2022-852

Alexander Kmentt (Referee)

Referee comment on "Opinion: How fear of nuclear winter has helped save the world, so far" by Alan Robock et al., Atmos. Chem. Phys. Discuss.,
<https://doi.org/10.5194/acp-2022-852-RC1>, 2023

This is a very important overview of the history of the nuclear winter research and the political significance of it. In the current situation of heightened nuclear risks (the Doomsday Clock stands at an unprecedented 90 seconds before midnight), this is a crucial contribution. It is particularly important to highlight that there is a lot of very "new" research that goes beyond the knowledge of nuclear winter of the 1980s. This "new" research thus merits a reassessment of the arguments around the sustainability of an approach to international security that is based on the prement threat of inflicting mass destruction with the risk of causing nuclear winter. This knowledge needs to be further promulgated and form the basis of policy decisions regarding nuclear weapons.

Below are some specific comments and recommendations on the text linked to specific lines in the manuscript:

line	comment
1	Fear of nuclear winter is not the only reason why the « world has been saved » so far and nuclear war has not happened in the past 8 decades. It is a major contribution but many other factors have played a role. Suggest: How Fear of Nuclear Winter has Helped Save the World, So Far.
46	Suggest: ,for which the International Campaign to Abolish Nuclear Weapons (ICAN) received the 2017 Nobel Peace Prize

- 47 See comment re title: Nuclear winter is but one reason.
- 49 Possible technical errors go beyond computer and sensor malfunctions
- 51 In addition to Russia's threats it is maybe worth highlighting that nuclear deterrence doctrines (of all nuclear-armed states) are based on the capability and readiness to use nuclear weapons
- 55 pp This whole section is really important as a background and history of the nuclear winter research. It may be useful to explain a bit more in detail (lines 117 pp) how exactly progress in computing and climate modelling contributed to "new" knowledge. This is against the background that some nuclear-armed states claim that there is nothing "new" and that they knew about the humanitarian consequences and nuclear winter all along. A bit more detail here could be helpful in clarifying that the situation regarding nuclear winter research is fundamentally different and "new" compared to the 1980s.
- 210 Factual correction: ICAN did not organise the 3 international conferences. These were organised by Norway, Mexico and Austria as governmental expert conferences. ICAN and other NGOs as well as academic experts were invited to participate. ICAN organised separate civil society events in the margins of the three governmental conferences. Furthermore, ICAN campaigned for states to attend. Other than that, ICAN did not have any responsibility in the organisation of the governmental conferences.

- 220 Factual correction: The process to obtain a negotiation mandate in the UN General Assembly was led by four countries Austria, Ireland, Mexico and South Africa – and this group was later expanded to include Brazil, Costa Rica, Indonesia, New Zealand, Nigeria and Thailand. These states submitted resolutions in the General Assembly which garnered the necessary support from States. ICAN successfully campaigned all along for states to support this process but it is important to be clear that this was a state-led process.
- 224 Important not to omit the crucial role of the International Committee of the Red Cross (ICRC)
- 242 pp I would suggest not to make too much of the attendance as observers. As welcome as it is, these states have stated their intention not to join the treaty. The transformational strength of the TPNW does not come from this. It is the normative pressure through increasing ratifications and signatories and the political pressure that comes from the TPNW underlying arguments on the humanitarian consequences and risks of nuclear weapons. This is a discursive process that has both a legal and a political dimension.
- 304 It is not just the increasing instability in South Asia. I would suggest “In view of today’s high level of nuclear risks”
- 329 pp It might be worthwhile to reference the fact that the impact of such famine scenarios on social structures, likely societal collapse, infrastructure, mass migratory movements, psychological impact etc. are not considered in these studies but that would have to be

included in any comprehensive attempt to understand the full scale impact of such scenarios.

368

Factual correction: The presentation was actually made at the 2022 Vienna Conference on the Humanitarian Impact of Nuclear Weapons (www.HINW22vienna.at), which was organised by Austria on the day before the First Meeting of States Parties

388

While the G20 statement is very important, its link to nuclear winter argument is not really clear. The reference to "inadmissible" is more a reference to the legal/prohibitive aspect of nuclear weapons use.

394

See above: nuclear deterrence depends on the readiness and capability to use nuclear weapons.