

Geosci. Model Dev. Discuss., community comment CC1
<https://doi.org/10.5194/gmd-2021-56-CC1>, 2021
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Comment on gmd-2021-56, four locations are a bit sparse for evaluating a global model

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Community comment on "Application of CCM SOCOL-AERv2-BE to cosmogenic beryllium isotopes: description and validation for polar regions" by Kseniia Golubenko et al., Geosci. Model Dev. Discuss., <https://doi.org/10.5194/gmd-2021-56-CC1>, 2021

This is a very interesting study. The agreement between data and simulations is quite good. However, arriving at a conclusion about the evaluation of the quality of the global chemistry-climate model SOCOL-AERv2-BE_{v1} based on only four measurement sites is questionable. Specifically, the following statement of the conclusion shows the limitation of relying on only two systems in each hemisphere: "The model correctly reproduces the temporal variability of ⁷Be concentrations on the annual and sub-annual scales, including a perfect reproduction of the annual cycle, which dominates data in the Northern hemisphere, and the absence of this cycle in the Southern hemisphere." The last part of this sentence is not correct. As demonstrated by Terzi/Kalinowski (2017), the Southern hemisphere shows clearly annual cycles though not well pronounced at the two selected stations at Punta Arenas (RN18) and Port-aux-Français, Kerguelen (RN30). Since the CTBTO operates currently 63 particulate systems of the International Monitoring System (IMS) which all measure Be-7, the data of more locations are available to the authors through the same vDEC arrangement by which they retrieved the IMS data at two locations.

Terzi, Lucrezia, and Martin Kalinowski. World-wide seasonal variation of ⁷Be related to large-scale atmospheric circulation dynamics. *Journal of Environmental Radioactivity* 178, no. 179 (2017): 1-15. <https://doi.org/10.1016/j.jenvrad.2017.06.031>