

Geosci. Model Dev. Discuss., referee comment RC1  
<https://doi.org/10.5194/gmd-2022-93-RC1>, 2022  
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## **Comment on gmd-2022-93**

Anonymous Referee #1

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Referee comment on "URANOS v1.0 – the Ultra Rapid Adaptable Neutron-Only Simulation for Environmental Research" by Markus Köhli et al., Geosci. Model Dev. Discuss., <https://doi.org/10.5194/gmd-2022-93-RC1>, 2022

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The authors present an excellent overview of the URANOS code in great detail. Given the continued use of CRNS this streamlined neutron transport code will be of great use to the community for evaluating and designing future experiments. The paper is well written and acceptable following some minor revisions. My only moderate comment is the need for more complex field data for validating the results (say irrigated row crops). These data would be greatly supported by URANOS model simulations to help untangle the complexity of this system. There have now been a number of papers developing this code (L600-620). Please see below for a few minor comments to address.

L58: Use of ontop is a bit awkward, please revise.

L126: is  $l$  the path length, please define here as well as  $\sigma$ .

L252. "in a converter takes place". I don't follow this statement please revise.

L440. A space is needed between the words to start sentence.

L498: Replace "As far as" with "If".

L520: Figure 11 is discussed before figure 10.

L522: Neutron paths not neutrons paths

L585: For more than 50 years ...

L604: fine tune.

L600-620: I think a table summarizing the various studies with URANOS would be easier to read and reference for the reader. Please consider changing.

L627. I don't follow this sentence about the evaluation of cross sections. Think there may be a missing word somewhere?