

AC1-Reply to RC1 on essd-2024-352

RC1 reads as follows:

The manuscript "A strontium isoscape of southwestern Australia and progress toward a national strontium isoscape" provides a timely and important contribution to understanding the, terribly under-researched, regional distribution of strontium isotope values in Australia. The authors present robust geochemical data in a useful and accessible fashion, which should be of wide interest for researchers from a range of fields. I hope that these authors continue their important work (begun as de Caritat et al. 2022 and de Caritat et al. 2023) to continue mapping these values throughout Australia.

My only minor suggestion is that the authors provide more details of how they tested the Rb level in the samples (detailed in lines 191-194). This doesn't change the substance of the paper in any way, but provides a useful methodological point for other studies.

Citation: <https://doi.org/10.5194/essd-2024-352-RC1>

Our Authors Comment in reply to RC1 is below.

We thank Reviewer 1, Prof Ian Moffat, for his thoughtful and supportive review of our manuscript. We indeed also hope further data collection and analysis on a Sr isoscape for Australia continues into the near future.

In response to the specific comment about Rb, we have added the following in the revised manuscript:

“Rubidium removal during chromatography was assessed by determining the amounts of Rb before and after chromatography. Before chromatography, an aliquot of solution prepared for chromatography was taken and diluted 100 times in 0.3 M nitric acid. This solution was analysed for Rb and Sr concentrations by quadrupole ICP-MS at WIGL. To determine the amount of Rb after chromatography, the Rb concentration was determined during Sr isotopic analysis by using (i) the Sr sensitivity for the session in question and (ii) the measured $^{85}\text{Rb}/^{88}\text{Sr}$ ratio.”