

Li, L., S. Li, 2022: A Comparison of two 20th century reanalysis datasets from the perspective of cross-equatorial flows. *J. Meteor. Soc. Japan*, **100**, 807-824. <https://doi.org/10.2151/jmsj.2022-042>

**Plain Language Summary:** This study compared two sets of 20th century reanalyses, ERA20C and 20CRv3, from the perspective of boreal summer low-level cross-equatorial flows (CEFs) over the Asian-Australian monsoon region. The results show a substantial gap between them in CEFs' interdecadal variability, and ERA20C is more reliable than 20CRv3, in spite of their overall consistence in climatological mean, interannual variability and long-term trend.

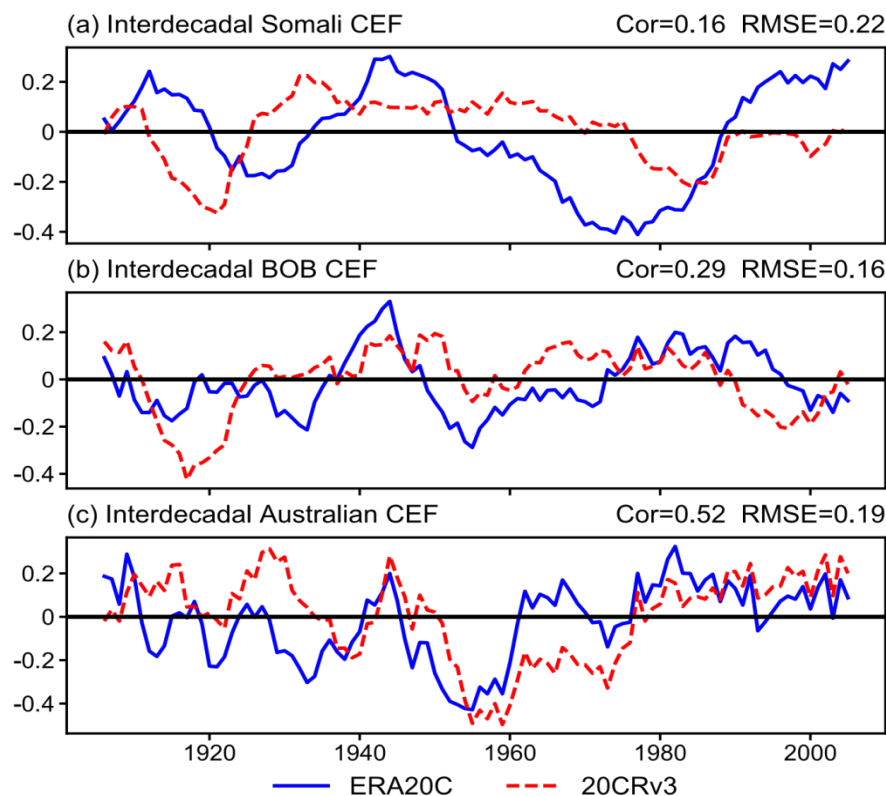


Figure 1. Evolution of normalized interdecadal component of (a) Somali CEF index, (b) Bay of Bengal CEF index, and (c) Australian CEF index ( $\text{m s}^{-1}$ ) in ERA20C and 20CRv3. The correlation between the two sets and their RMSE are given in the upper-right of each panel.

- Cross-equatorial sea-level pressure gradient and Indian summer monsoonal rainfall are verified as two benchmarks for inspecting CEFs' reliability.
- 20CRv3 and ERA20C have an overall consistence in CEFs' climatological spatial structure, interannual variability and long-term trend, but a substantial gap in interdecadal variability.
- ERA20C is validated to be more suitable for investigating decadal variability associated with CEFs.