*Supplement of*

An evaluation of daily precipitation from a regional atmospheric reanalysis over Australia

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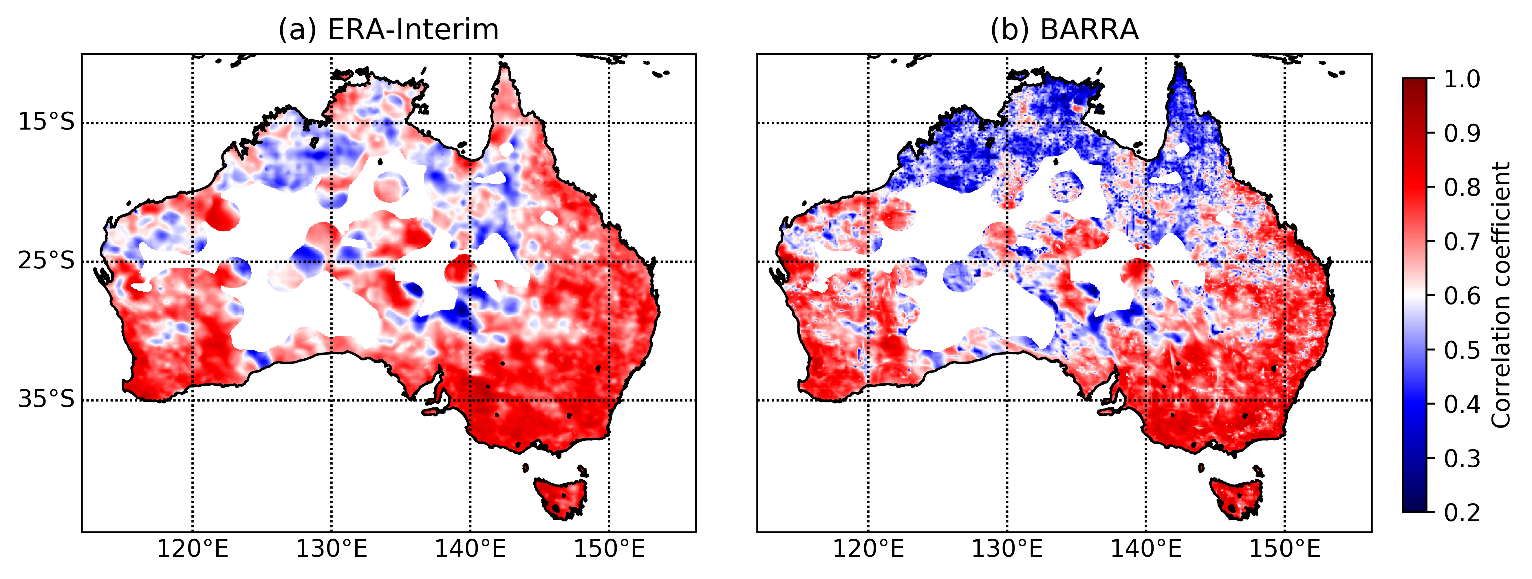


Figure S1 Correlation coefficient for reanalysis datasets against AWAP dataset. Missing values and ocean are masked.

Table S2 Metrics used in the evaluation of precipitation data.

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|  | Measures | Equation | Description |
| Continuous metrics | Pearson correlation coefficient (r) |  | Pearson product moment correlation measures the linear correlation of the observed and modelled values.  Range [-1,1]  Best value =1 |
| Bias ratio () |  | Bias ratio measures the agreement between means of modelled and observed values.  Evaluates bias in total volume  over-estimation (*β*>1) under-estimation (*β*<1)  Range [0, +∞]  Best value =1 |
| Variability ratio () |  | Variability ratio measures the agreement between Coefficient of Variation (CV) of modelled and observed values. The use of CV in the calculation of γ ensures that the bias and variability ratio are not cross-correlated (Kling et al., 2012)  Evaluates spread . over-dispersed (*γ*>1) or under-dispersed (*γ*<1)  Range [0, +∞]  Best value =1 |
| Modified Kling-Gupta Efficiency (KGE’) |  | Summarises correlation, bias ratio and variability ratio  Range [-∞,1]  Best value =1 |
| Categorical metrics | Probability of Detection (POD) or Hit Rate |  | POD measures the fraction of number of events that were correctly reported by the model.  Sensitive to hits but ignores false alarms. Suitable for rare events  Range [0,1]  Best value =1 |
| False Alarm Ratio (FAR) |  | FAR measures the fraction of number of non-events that were incorrectly reported as events by the model.  Sensitive to false alarm but ignores misses  Range [0,1]  Best value =0 |
| Threat Score (TS) or Critical Success Index |  | Measures the fraction of observed events that were correctly modelled. It penalizes both misses and false alarms  Range [0,1]  Best value =1 |
| Frequency Bias (fBias) |  | Measures the ratio of number of events modelled and observed.  Range [0, +∞]  Best value =1 |
| Where,  *x* is gauge precipitation and *y* is gridded precipitation being evaluated.  H =Hits, FA=False alarm, and M = Miss for categories under consideration | | | |