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天津大学
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Download Abstract here:

Evaluation of reanalysis soil moisture products using Cosmic Ray Neutron Sensor observations across the globe

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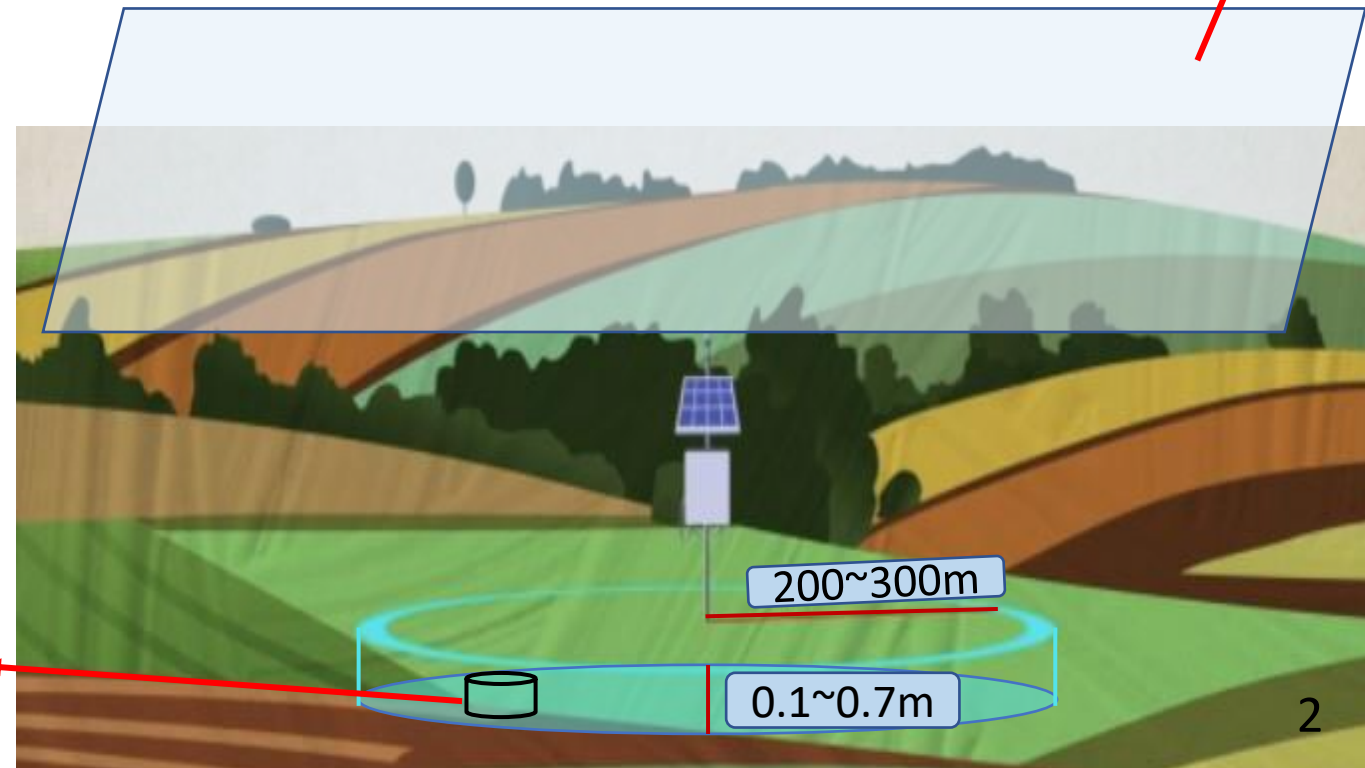
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Research goal & Motivation

- Lots of soil moisture products available
  - how to choose?

- Why evaluate for the reanalysis products?
  - Long time record
  - Global spatial coverage

- Why use Cosmic Ray Neutron Sensor (CRNS) observations ?
  - Field-scale measurement
  - Spatial scale mismatch
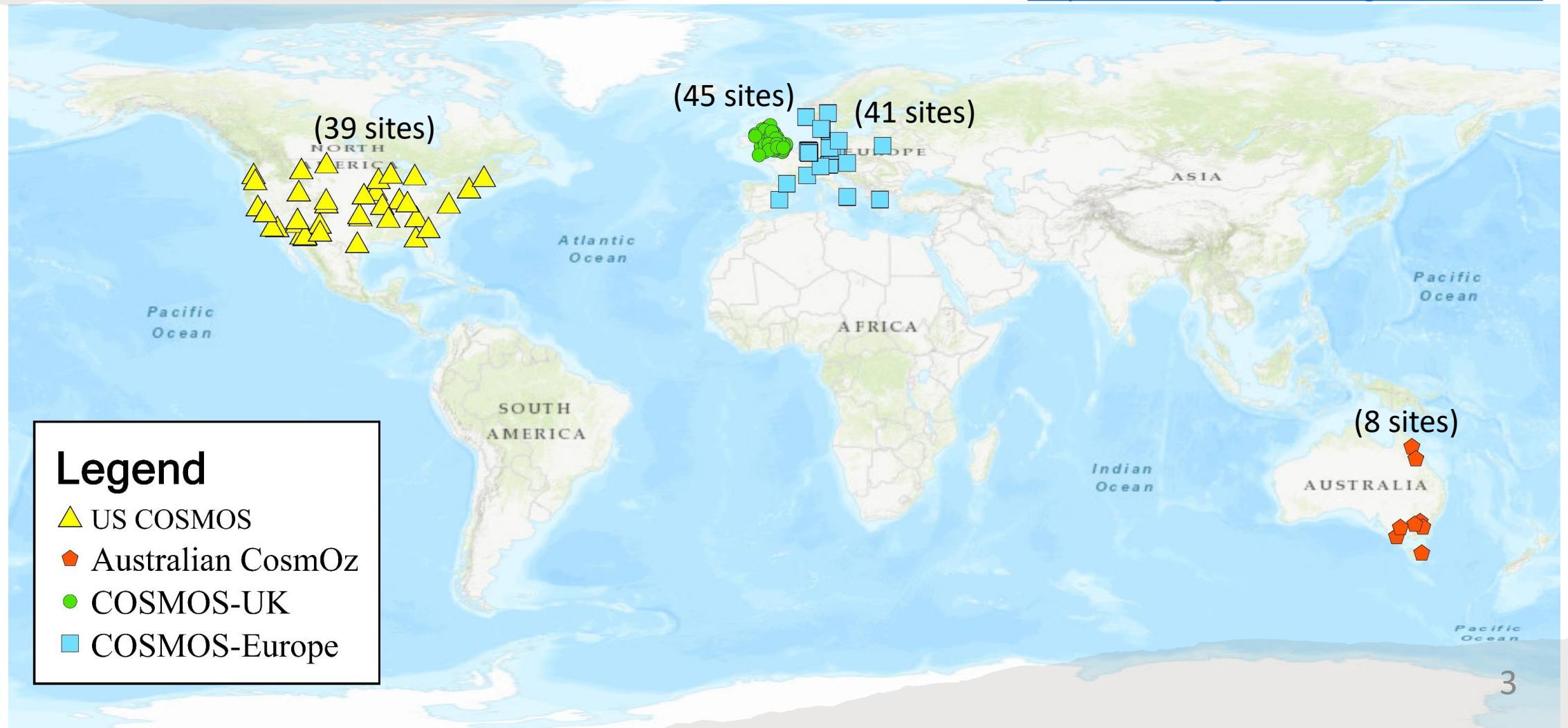

Reanalysis product grid
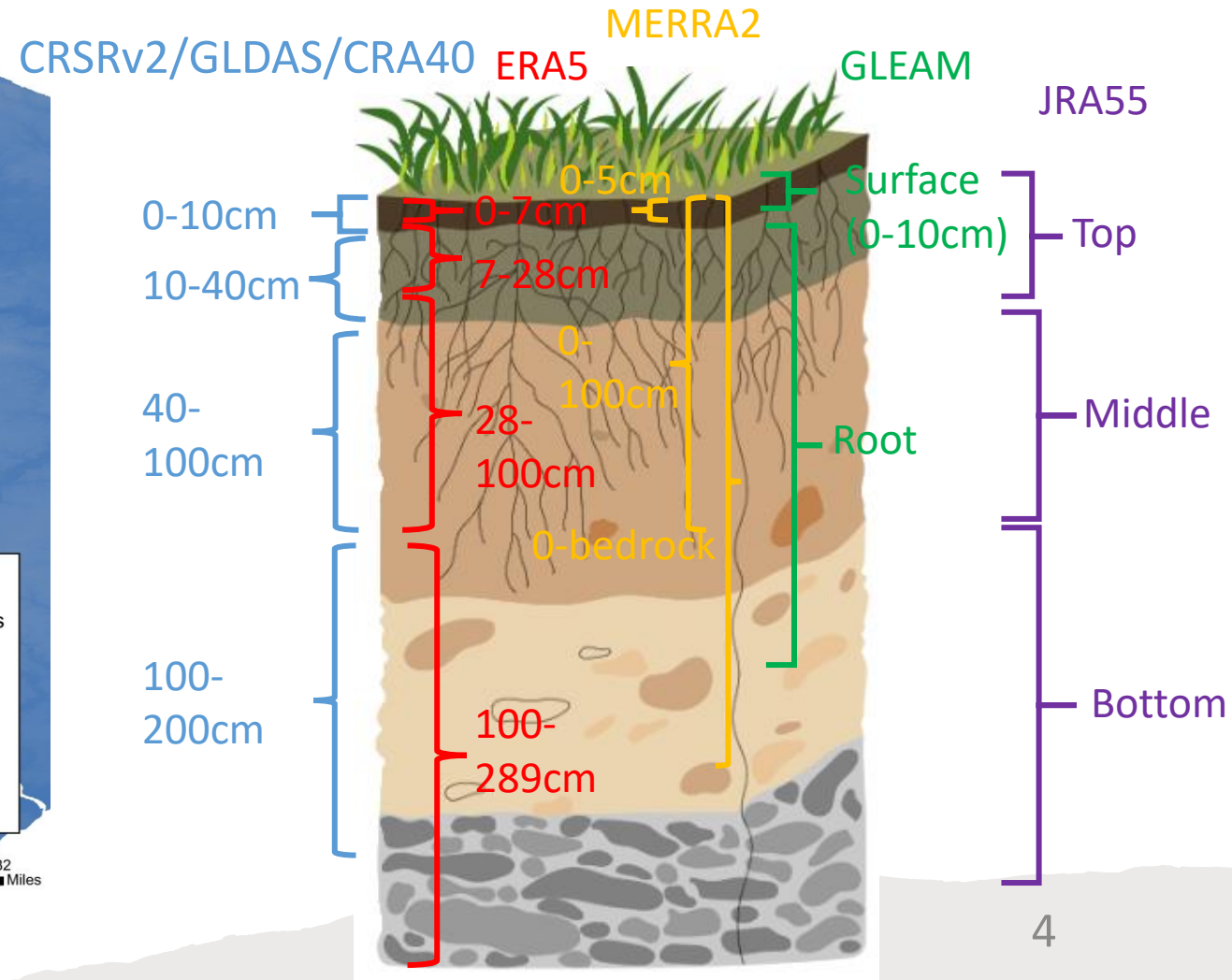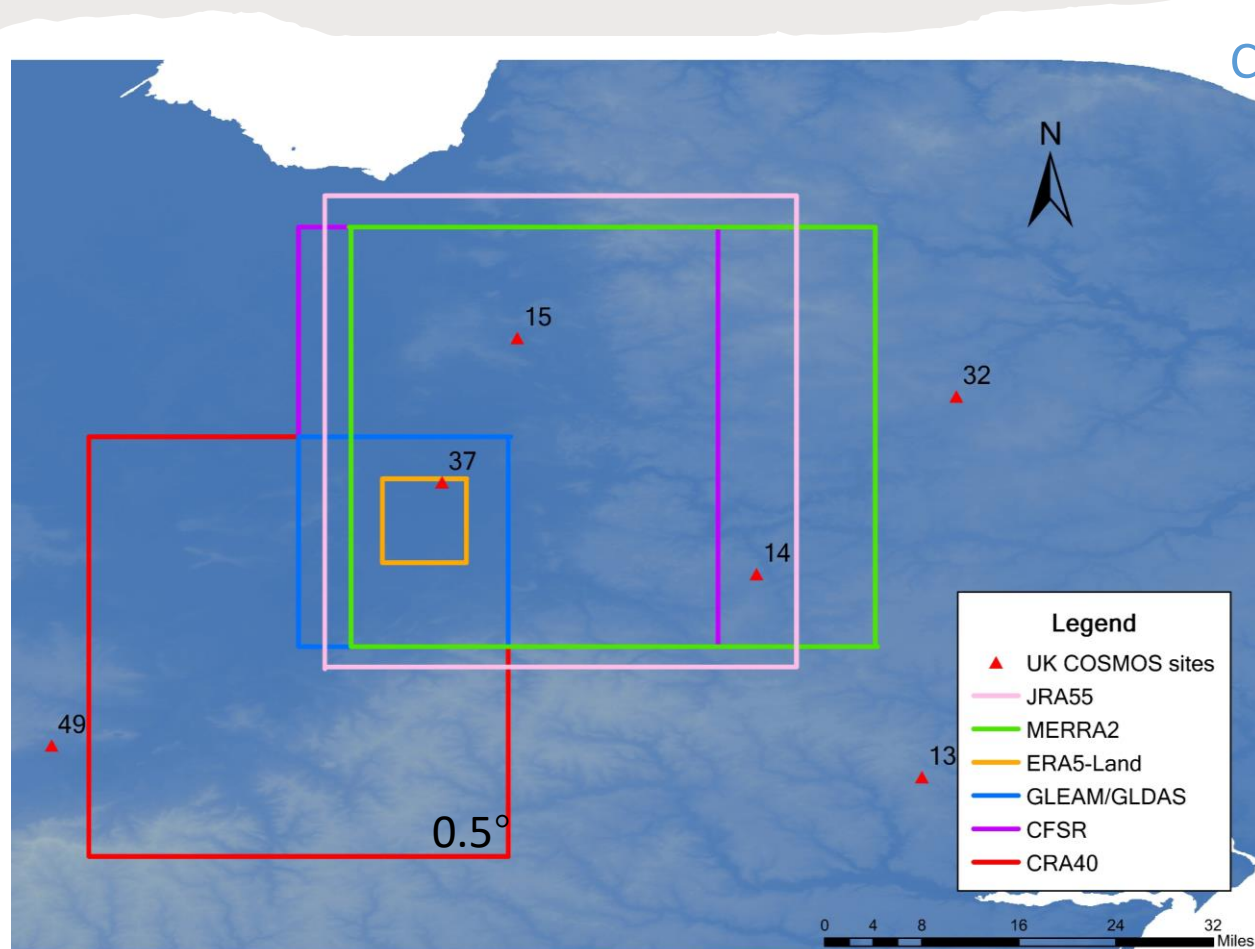
200~300m

0.1~0.7m

Point measurement

2

Collect a total of 133 CRNS sites across the globe

- Different CRNS networks use different neutron correction methods
- Process the harmonized global observations by using "Crispy" tool (Daniel et al., 2021)

https://doi.org/10.5194/gmd-2021-77

We evaluate 7 reanalysis products that have a great variability of spatial, vertical resolution
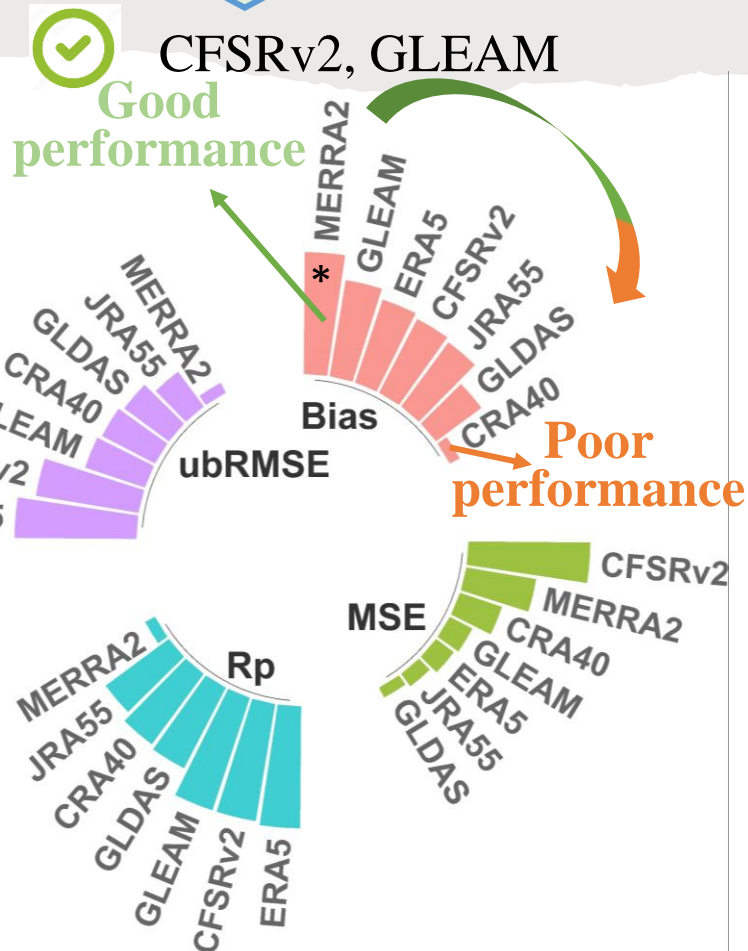
- Spatial resolution

- Vertical resolution

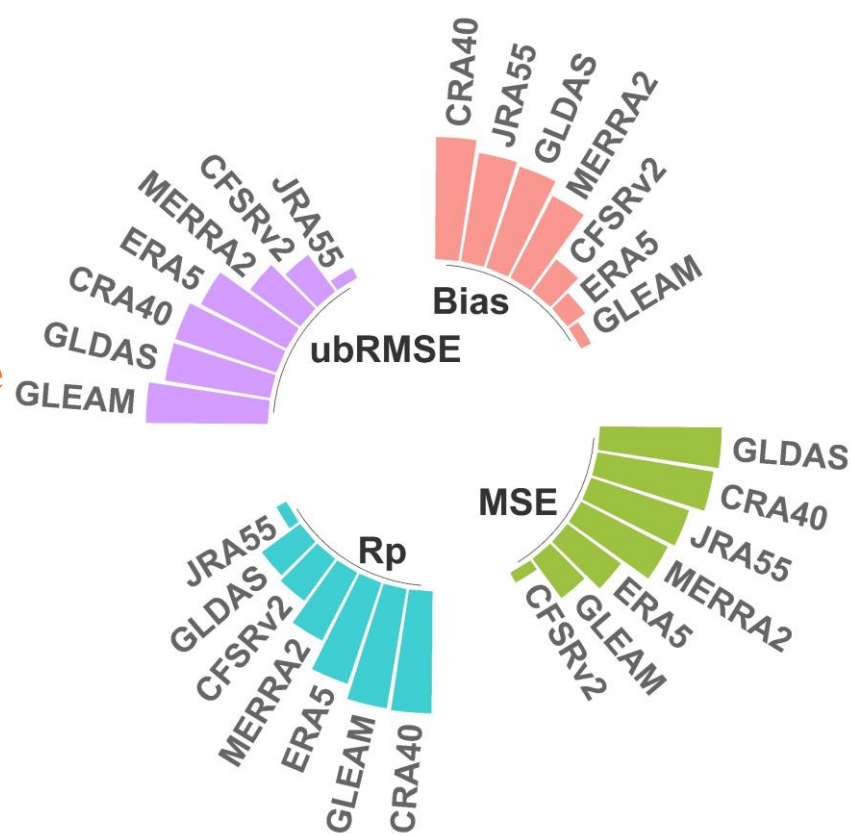# Performance of reanalysis products varies between different regions
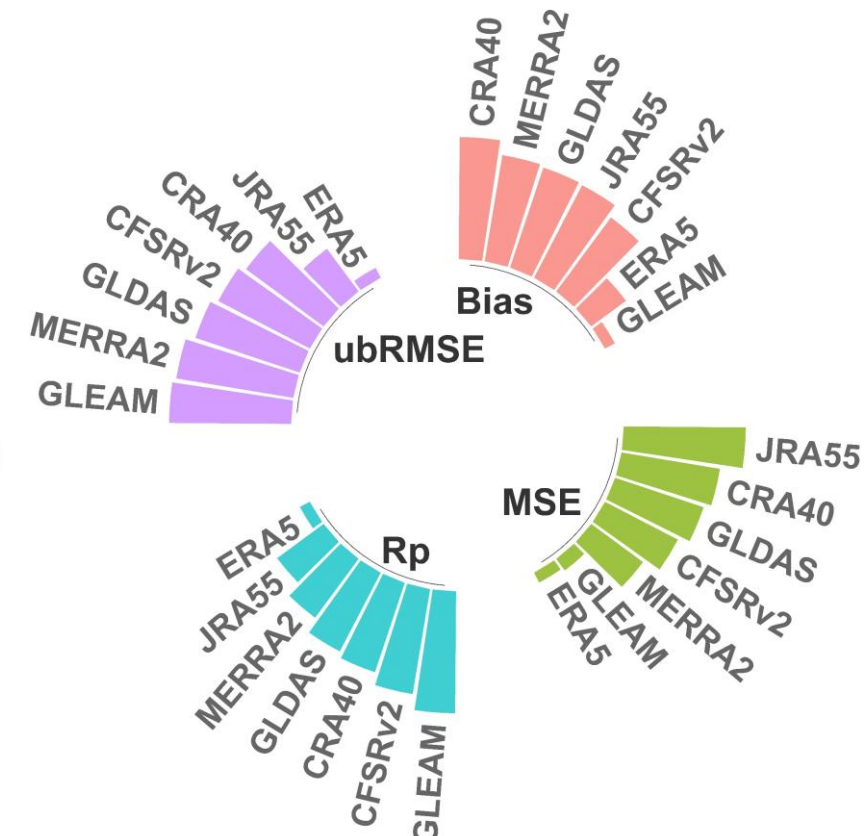

UK&EU

✓ CFSRv2, GLEAM

Good performance

Poor performance

US

✓ CRA40, GLDAS

Australia

✓ CRA40, GLDAS

*The higher the bar, the better the performance of the reanalysis product in this metric.

Thank you for your attention!
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