

Climatology and Interannual Variability of Dynamic Variables in Multiple Reanalyses Evaluated by the SPARC Reanalysis Intercomparison Project (S-RIP)

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As part of the SPARC Reanalysis Intercomparison Project (S-RIP) an evaluation the temperatures and winds fields was conducted from all the recent and past reanalyses (NCEP/NCAR through MERRA-2). The intercomparison was conducted between the reanalyses themselves and also utilizing data sets not assimilated in the reanalyses. The data sets were evaluated for long term consistency, biases, and individual irregularities not found in the other reanalyses. If discontinuities were identified the reason behind the discontinuity was determined and discussed. No one reanalysis was without flaws. Differences between the more recent reanalyses gradually decreased with time as more observations were assimilated with great improvement when the GPSRO data was assimilated. We will present the major highlights (good and bad) from this evaluation and discuss what these mean for the user community. Additionally, with the ERA5 in production, initial intercomparisons with the more recent reanalyses and the reanalysis it replaces (ERA-Interim) will be presented.

Key words: reanalysis, intercomparison, SPARC

References:

Long, C. S., Fujiwara, M., Davis, S., Mitchell, D. M., and Wright, C. J.: Climatology and interannual variability of dynamic variables in multiple reanalyses evaluated by the SPARC Reanalysis Intercomparison Project (S-RIP), *Atmos. Chem. Phys.*, **17**, 14593-14629, <https://doi.org/10.5194/acp-17-14593-2017>, 2017.

See also: The inter-journal special issue on "The SPARC Re analysis Intercomparison Project (S-RIP)" in Atmospheric Chemistry and Physics (ACP) and Earth System Science Data (ESSD):

https://www.atmos-chem-phys.net/special_issue829.html

https://www.earth-syst-sci-data.net/special_issue10_829.html