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Inter-comparison of extra-tropical cyclone activity in six reanalysis datasets

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This poster inter-compares extra-tropical cyclone activity in the following six reanalyses: NCEP-NCAR Reanalysis (NCEP1), NCEP-DOE Reanalysis (NCEP2), NCEP-CFS Reanalysis (CFSR), ERA40 Reanalysis, ERA-Interim Reanalysis (ERAint), and the 20th Century Reanalysis (20CR; ensemble of 56 runs for 1871-2008). The intercomparison is based on the results (cyclone counts, intensity and activity index) from applying an objective cyclone identification/tracking algorithm to each of the six datasets. The results show that the CFSR seems to be an "outlier" in the sense that it is of the highest model resolution among the six reanalyses, but it does not show more strong cyclones than does any of the other five reanalyses (it does show many more cyclones of moderate intensity). On the contrary, the ERAint and ERA40 do show more strong cyclones than other reanalyses of lower model resolution (ERA40, NCEP1, NCEP2, and 20CR). The results also show that the 20CR is more different from the ERA40 than from the NCEP1 and NCEP2, which is at least in part due to the model resolution difference. However, the 20CR shows fewer medium-strong cyclones over lands, but more medium-strong cyclones in the Southern Hemisphere (SH), than does the NCEP1 or NCEP2. In the SH, the 20CR appears to be more homogeneous over time than the NCEP1 and the ERA40.