

The IMILAST project: An intercomparison of ten identification/tracking algorithms for extra-tropical cyclones, with emphasis on temporal evolution of NH regional cyclone statistics

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The IMILAST team has applied ten different cyclone identification/tracking algorithms to 6-hourly fields (SLP or Z100 or Z850) of ERA-Interim Reanalysis for the period from 1 January 1989 to 31 March 2009. This poster presents an intercomparison of Northern Hemisphere (NH) extra-tropical cyclones in the identifying/tracking results of the IMILAST project. This intercomparison focuses on the temporal evolution of cyclone characteristics (such as regional cyclone counts and mean intensity). The main conclusions are: (1) The algorithms are more different in identifying moderate-weak cyclones than in identifying deep cyclones. All algorithms show very similar statistics (including counts and mean intensity) of deep cyclones, while some algorithms identify considerably more cyclones of moderate-weak intensity than other algorithms. (2) The inter-algorithm differences are bigger in the actual values of cyclone statistics (such as regional cyclone counts and mean intensity) than in the time trends in these statistics. All algorithms share similar temporal evolution of the cyclone characteristics. (3) Whether and how data are interpolated before applying an identification/tracking algorithm matters. To a certain extent, interpolating a dataset onto a finer grid on which to identify/track cyclones increases the number of cyclones identified (especially for regions of complex terrain) and their mean intensity. The resulting statistics of cyclones also very much depend on the parameters used: the same identification/tracking algorithm applied with different parameter settings can produce very different values of cyclone statistics (such as regional counts and mean intensity), but similar time trends.