



## **Comparison of cyclone statistics based on two cyclone tracking algorithms - a contribution to IMILAST**

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The representation of cyclone activity and its characteristics may seriously depend on the methodology chosen for cyclone identification and tracking. The IMILAST project is set out to quantify the uncertainties that arise from the choice of the tracking algorithm by evaluating the different identification and tracking schemes. This analysis is aimed at contributing to this effort.

Two algorithms are considered here: The first was developed at the University of Salento and identifies cyclones based on a search for pressure minima. In the second scheme, originally developed at the Melbourne University, the cyclone identification is based on a search for maxima in the Laplacian of pressure.

Both algorithms have been applied to the Mean Sea Level pressure field of the ERA Interim dataset at two horizontal resolutions ( $0.75^\circ \times 0.75^\circ$  and  $1.5^\circ \times 1.5^\circ$ ). Climatologies of track densities, regions of cyclogenesis and the distribution of explosive cyclones (characterised by an unusually large deepening rate of their core pressure at mid-latitudes) are analysed. For selected extreme events core pressures and Laplacian of pressure values are compared along the cyclone tracks. We typically find good agreement between the cyclone paths at the times of high cyclone intensity, while the heads and tails of the tracks can differ.

The methods used to calculate the spatial distribution of cyclogenesis and cyclolysis rates, as well as track densities also differ between the two schemes. Illustrative examples are given to document the effect of the choice of the post-processing on the cyclone statistics.