



Intercomparison of mid latitude storm diagnostics (IMILAST)

U. Neu and the IMILAST Team

ProClim- Forum for Climate and Global Change Swiss Academy of Sciences , Bern, Switzerland (neu@scnat.ch)

Diagnostics of the observed and projection of the future changes of extratropical storms are a key issue e.g. for insurance companies, risk management and adaptation planning. Storm-associated damages are amongst the highest losses due to natural disasters in the mid-latitudes. Therefore the knowledge of the future variability and change in extratropical cyclone frequency, intensity and track locations is crucial for the strategic planning and minimization of the disaster impacts. Future changes in the total number of storms might be small but major signals could occur in the characteristics of cyclone life cycle such as intensity, life time, track locations.

The quantification of such trends is not independent from the methodologies for storm track detection applied to observational data and models. Comparison of differences in cyclone characteristics obtained using different methods from a single data set may be as large as or even exceed the differences between the results derived from different data sets using a single methodology. Even more, the metrics used become particularly sensitive, resulting in the fact that scientific studies may find seemingly contradictory results based on the same datasets.

For users of storm track analyses and projections the results are very difficult to interpret. Thus, it would be very helpful if the research community would provide information in a kind of “handbook” which contains definitions and a description of the available different identification and tracking schemes as well as of the parameters used for the quantification of cyclone activity. It cannot be expected that there is an optimum or standard scheme that fulfills all needs. Rather, a proper knowledge about advantages and restrictions of different schemes must be obtained to be able to provide a synthesis of results rather than puzzling the scientific and the general public with apparently contradicting statements. The project IMILAST aims at providing a systematic intercomparison of different methodologies and a comprehensive assessment of all types of uncertainties inherent in the mid-latitude storm tracking by comparing different methodologies with respect to data of different resolution (time and space) and limited areas, for both cyclone identification and cyclone tracking respectively.