Intercomparison of mid latitude storm diagnostics (IMILAST) – first results

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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 cyclone characteristics such as intensity, life time, or track locations.

The quantification of such trends strongly depends on the methodologies for storm track detection. Thus, scientific studies may find seemingly contradictory results based on the same datasets, which makes the interpretation of storm track analyses and projection results very difficult for any users. The project IMILAST aims at providing a systematic intercomparison of different methodologies a comprehensive assessment of all types of uncertainties inherent in the mid-latitudinal storm tracking. This should result in a kind of "handbook" which presents advantages and restrictions of different schemes, and 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 and storm tracks.

In an intercomparison experiment numerous groups using a dozen different tracking methodologies have calculated storm tracks for a pre-defined 20 year period and the northern and southern hemisphere respectively. As input data all calculations used the same ERA-interim reanalysis data set. The results of different analysis will be presented, which compare the differences between the numerous methods concerning e.g. track density and trends, distribution functions, wavelet analysis, explosive developments, etc. Furthermore, a short summary of the main findings of a workshop taking place immediately before the EGU meeting, at which the results of this comparative analysis are discussed, will be presented.