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Storm-Tracks in ERA-40 and ERA-Interim Reanalyses

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Extratropical cyclones, their dominant paths, frequency and intensity have long been the object of climatological studies. The analysis of cyclone characteristics for the Euro-Atlantic sector (85ºW-70ºE; 20ºN-75ºN) presented here is based on the cyclone detecting and tracking algorithm first developed for the Mediterranean region (Trigo et al., 1999, 2002) and recently extended to a larger Euro-Atlantic region (Trigo, 2006).
The objective methodology, which identifies and follows individual lows (Trigo et al. 1999), is applied to 6-hourly geopotential data at 1000-hPa from two reanalyses datasets provided by the European Centre for Medium-Range Weather Forecasts (ECMWF): ERA-40 and ERA-Interim reanalyses. Two storm-track databases are built over the Northern Atlantic European area, spanning the common available extended winter seasons from October 1989 to March 2002. Although relatively short, this common period allows a comparison of systems represented in reanalyses datasets with distinct horizontal resolutions (T106 and T255, respectively). This exercise is mostly focused on the key areas of cyclone formation and dissipation and main cyclone characteristics for the Euro-Atlantic sector.

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