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Analysis of cyclone track characteristics forming in the Western/Central Mediterranean region

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Midlatitude cyclones are analyzed on a selected region covering most part of southern Europe and the Mediterranean Sea (i.e., 35-50°N, 10°W-25°E). On the base of mean sea level pressure fields of the ECMWF (European Centre for Medium-range Weather Forecast) Reanalysis Dataset (ERA-40), detailed evaluation of the Mediterranean cyclones is accomplished for the period between 1957 and 2002 on a 1-degree horizontal resolution grid. Cyclone centers are identified using anomaly fields, and then, the paths of these mid-latitude cyclone centers are tracked with a 6-hour time step (using 00 UTC, 06 UTC, 12 UTC, and 18 UTC). Decadal, annual, and seasonal statistical analysis of cyclone tracks includes the study of (i) the location of the cyclone center genesis, (ii) the shape and the general position of cyclone tracks, (iii) the frequency and the durations of cyclones, (iv) the seasonality of occurrences in selected special subregions, (v) the fields of the so-called cyclone activity index, etc.