



Estimation of Vb cyclone track activity back to the year 1850

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Cyclones moving from the Mediterranean northeastwards to eastern Europe (called Vb cyclones) are of high importance to the hydrological conditions in central and eastern Europe due to the transport of moist air masses into that region. Synoptic situations where these air masses are lifted at mountain ranges may show severe damage as a result of flooding, like in August 2002. In order to estimate long-term variability of Vb cyclone activity, a reconstructed daily dataset (EMSLP) is used which provides mean sea level pressure on a 5 by 5 degree grid for the period 1850 to 2003. Cyclone tracking with such a coarse spatial and temporal resolution provides many difficulties, especially for fast moving lows. A sophisticated cyclone tracking scheme has been applied already onto this dataset, but the variability of the Vb track has not been studied in detail for this period. In the presented study additionally alternative techniques are applied, such as techniques based on spatial correlations and assignment of pressures pattern sequences to predefined prototype sequences by Euclidean distances. The different results are compared and validated by comparisons to modern datasets in order to achieve a relatively reliable catalogue of Vb cyclones back to 1850 for application to investigations on flood events in Central Europe.