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ADGB contribution to D11

ADGB is involved in the downscaling of extremes of precipitation over Northern Italy. The experience made with NCEP reanalysis so far showed that the extreme precipitation events are not captured in the observed data when the horizontal grid is too coarse. Downscaling is therefore necessary to derive usable information from a GCM output.

The analysis on the observed data showed that extreme events occur when a cyclone in the lee of the Alps forms and slowly moves over Northern Italy. The identification of such events has been done using the 850 hPa gopotential height at 12 GMT. Fields at 00 GMT are also used to derive information on the cyclone track. Relative humidity at 850 and 700 hPa is used to filter out cyclones which cause “normal” precipitation. Useful information about the cyclones track can also be derived from the 500 hPa geopotential height.

ADGB developed a code able to identify cyclones in the Mediterranean area using the sea level pressure at 12 hours interval (00 and 12 GMT).

The recommendation that can be derived from the work done so far on NCEP data are that the model data should be available at 12 hours intervals.