



An analysis of climate variability during the second half of the 20th century in North-Western Italy

N. Ciccarelli (2), J. von Hardenberg (2), A. Provenzale (2), C. Ronchi (1), A. Vargiu (1)

(1) Piedmont Regional Weather Service, ARPA Piemonte, Torino, Italy, (2) ISAC – CNR, Torino, Italy

Data from high-resolution local measurement networks are extremely useful to estimate the properties of climate changes at regional scales. However, inhomogeneities in the spatial and temporal distribution of the measurement stations require careful assessment of the statistical significance of the results. In this contribution we analyze daily temperature and precipitation data from a dense measurement network in North-Western Italy in the period 1952-2002, and compare them with the ERA40 re-analysis set in the period 1958-2002 (note that the stations considered in this work are not part of the ERA40 assimilation procedure). The results indicate the presence of a significant warming trend in average temperature, which is especially evident in winter and summer. By contrast, no significant trend in the precipitation variables is detected. These two results together indicate a significant increase of summer aridity in North-Western Italy.