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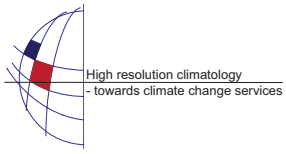

National, ready-to-use climate indicators calculation and dissemination

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In Italy, meteorological data necessary and useful for climate studies are collected, processed and archived by a wide range of national and regional institutions. As a result, the density of the stations, the length and frequency of the observations, the quality control procedures and the database structure vary from one dataset to the other. In order to maximize the use of those data for climate knowledge and climate change assessments, a computerized system for the collection, quality control, calculation, regular update and rapid dissemination of climate indicators (denominated SCIA) was developed. Along with the pieces of information provided by complete metadata, climate indicators consist of statistics (mean, extremes, date of occurrence, standard deviation) over ten-days, monthly and yearly time periods of meteorological variables, including temperature, precipitation, humidity, wind, water balance, evapotranspitaton, degree-days, cloud cover, sea level pressure, solar radiation. In addition, normal values over thirty-year reference climatological periods and yearly anomalies are calculated and made available. All climate indicators, as well as their time series at a single location or spatial distribution at a selected time, are available through a dedicated web site (www.scia.sinanet.apat.it). In addition, secondary products like high resolution temperature maps obtained by kriging spatial interpolation, are made available. Over the last three years, about 40000 visitors accessed to the SCIA web site, with an average of 45 visitors per day. Most frequent visitors belong to categories like universities and research institutes; private companies and general public are present as well. Apart from research purposes, climate indicators disseminated through SCIA may be used in several socio-economic sectors like energy consumption, water management, agriculture, tourism and health. With regards to our activity, we base on these indicators for the estimation of climate trends needed for climate impact and vulnerability assessment over Italy, and as a contribution to the national communications to the UNFCCC. For this purpose, homogenization procedures are carried out on the longest and most complete time series, in order to filter out non-climatic signals; in addition, statistical models are applied for trend estimates on the most important climate indicators such as averages and extremes of temperature and precipitation.