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A new database of ground-based cloudiness observations for Italy since the 19th century

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Italy has a very important role in the development of meteorological observations. Consequently, a heritage of data of enormous value has been accumulated over the last three centuries. However, only a small fraction of them is available in computer readable form and the available records mainly concern temperature, precipitation and pressure. Within this context, we set up a project to recover as much as possible cloudiness Italian records containing information about total cloud cover (TCC), low and middle cloud cover and cloud types. The data were collected from the former national central office for meteorology (now CRA-CMA), the national air force meteorological and climatological service, and from some of the oldest Italian observatories such as Milan, Rome, Turin and Venice. The database contains sub-daily (from 3 to 8 observations per day for each station) information about TCC but also about the amount and the type of low, middle and high clouds in the sky. The oldest record start at the end of 18th century and about 30 records start in the 1880s. Currently, quality check and tests for temporal homogeneity of the TCC records over the whole period are in progress. For the period 1951-2004 the records have been already checked for quality and homogenized. The monthly means have been completed by means of the neighboring records, projected onto a regular grid and averaged in order to get regional records (Northern and Southern Italy). This new dataset will be presented and the results of the first analyses will be discussed in order to search for temporal variability and long-term trends. The analyzed regional records show a decreasing tendency until the 1990s. For the following period it will be necessary to update the trend to today in order to understand the behavior of the TCC during the last years.