



Historical hydrology and database on flood events (Apulia, southern Italy)

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Historical data about floods represent an important tool for the comprehension of the hydrological processes, the estimation of hazard scenarios as a basis for Civil Protection purposes, as a basis of the rational land use management, especially in karstic areas, where time series of river flows are not available and the river drainage is rare.

The research shows the importance of the improvement of existing flood database with an historical approach, finalized to collect past or historical floods event, in order to better assess the occurrence trend of floods, in the case for the Apulian region (south Italy).

The main source of records of flood events for Apulia was the AVI (the acronym means Italian damaged areas) database, an existing Italian database that collects data concerning damaging floods from 1918 to 1996.

The database was expanded consulting newspapers, publications, and technical reports from 1996 to 2006.

In order to expand the temporal range further data were collected searching in the archives of regional libraries. About 700 useful news from 17 different local newspapers were found from 1876 to 1951. From a critical analysis of the 700 news collected since 1876 to 1952 only 437 were useful for the implementation of the Apulia database. The screening of these news showed the occurrence of about 122 flood events in the entire region.

The district of Bari, the regional main town, represents the area in which the great number of events occurred; the historical analysis confirms this area as flood-prone.

There is an overlapping period (from 1918 to 1952) between old AVI database and new historical dataset obtained by newspapers. With regard to this period, the historical research has highlighted new flood events not reported in the existing AVI database and it also allowed to add more details to the events already recorded.

This study shows that the database is a dynamic instrument, which allows a continuous implementation of data, even in real time.

More details on previous results of this research activity were recently published (Polemio, 2010; Basso et al., 2012; Lonigro et al., 2013)

References

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