



## **Data validation procedures in Agricultural Meteorology. A prerequisite for their use**

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Quality meteorological data sources are critical to scientists, engineers, climate assessments and to make climate-related decisions. Accurate quantification of reference evapotranspiration (ET<sub>0</sub>) in irrigated agriculture is crucial for optimizing crop production, planning and managing irrigation and for using water resources efficiently. Validation of data insures that the information needed is been properly generated, identifies incorrect values and detects problems that require immediate maintenance attention. In this work, several validation procedures are described and applied to data from Meteorological Information Network of Andalusia (Southern Spain) for assessing their integrity and quality. This network consists nearly of one hundred automatic weather stations, the aim of which is to provide ET<sub>0</sub> and other meteorological data to improve irrigation water management. The procedures include validations of record structure data, range/limits, time and internal consistency, persistence and spatial consistency tests. The system is capable of identifying several types of errors and it is used as a tool that allows to take decisions as sensor replacement, and to remove data prior to their application. Quality assurance tests consist of procedures or rules against which data are tested, setting data flags to provide guidance to end users. Results from validation of air temperature and relative humidity, solar radiation, wind speed and precipitation data are reported in this work.