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Snow in Castile-León: trends and variability

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The location of Castile and León, inside the Iberian Peninsula, in the Northwestern quadrant, determines, in large measure, the climatic conditions of its territory, granting it very characteristic traits, mostly in the mountainous areas. It is important to note that during a large part of the year, the region is under the influence of Jet Stream, and thus, gives way to very diverse dynamic situations, which turn into different and heterogeneous types of weather. So, in many areas of the region, especially in the most elevated areas, these synoptic and mesoscale situations generate snow precipitation.

We should point out that snowfall is one of the principal meteorological risks of Castile and León. Thus, on average, in some mountainous areas there are more than 40 events of snowfall registered annually, with the month of January being the month in which the highest frequency of snowfall appears. The social repercussions of this snowfall are represented in the isolation of places, essentially mountainous, highways being blocked, increase in traffic accidents, etc. As proof of this, it is this type of episode that receives ample coverage by the media, which has a linear relationship with the social perception of risk.

As such, the objective of the current work is to analyze the annual trend of days with snow in the different meteorological stations pertaining to AEMET placed in the Community. The period of study is from 1960-2010.

Additionally, we have also evaluated trends in annual days of freezing temperature and annual absolute minimum temperature, with the objective of facilitating a meteorological interpretation of the trends obtained on days with snowfall.

Finally, the results show that in the majority of stations, a significant negative trend in days with snowfall and annual days with freezing temperatures, and a positive trend in annual absolute minimum temperatures. However, we observed variability in the different regions in the area of study.

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