

GIS-based climatology for Andorra related to the main Western European circulation patterns

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Based on the daily SLP circulation catalogue obtained by Esteban *et al.* (2006) for Western Europe, detailed temperature and precipitation climatology using GIS techniques is obtained for Andorra (Pyrenees). The 20 daily circulation patterns cover all days between 1960 and 2001 and are generated using rotated PCA and K-means clustering techniques. The final GIS maps associated to each circulation pattern have been constructed using the multiple regression analysis methods Ninyerola *et al.* (2000) applied to monthly and annual temperature and precipitation data in Catalonia (NE Spain). The daily temperature and rainfall data used from Andorran, French and Catalan weather stations have been previously checked for detecting outliers and inhomogeneities. The results confirm the complexity of the spatial distribution of meteorological phenomena in mountainous areas as Andorra, and show the influence of Mediterranean, Continental and Atlantic climates over this country of the Pyrenees.