



Characterization of temporal and spatial patterns of snowfalls and avalanche activity related to circulation types in Andorran ski resorts

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Since the 80's, operations of Avalanche Release Intervention Plans (PIDA) in ski resorts and the roads, carried out by the ski patrols and the Roads Management Service of the Principality of Andorra have been systematically carried out and several data records are available from these activities (activity of natural avalanches and artificial triggering, positive and negative shots,...). Moreover, snowpack records from the same period are daily available for the different ski resorts of Andorra. This data can be of a great value to better understand the snowpack and avalanche dynamics in Andorra. In order to characterize and model the temporal and spatial patterns of snow and avalanche activity in Andorran ski resorts, these records will be crossed with a synoptic circulation types classification from the 80's to 2012. Andorra is located in the axial Pyrenees and in the middle of a climatic transition zone. For this reason, different atmospheric circulation types tend to lead to episodes with different spatial patterns of snow distribution and avalanche activity affecting very differently the different ski resorts at very short distances. These results will help in the decision-making and risk management in heavy snow events in ski resorts when artificial triggering of avalanches and snow management is required.