Geophysical Research Abstracts Vol. 16, EGU2014-6738, 2014 EGU General Assembly 2014 © Author(s) 2014. CC Attribution 3.0 License.



How well do weather types describe the weather of an Alpine region?

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An existing circulation type classification method is applied to investigate the variability of meteorological quantities among and within different weather types over Trentino, a mountainous region in the Southern Alps. In the adopted classification scheme, circulation patterns over the Alps are characterized in terms of their degree of zonality, meridionality and vorticity. Thus, the direction of the winds impacting over the Alps has a primary role when differentiating among weather types. The original scheme was refined by considering the position of the low pressure center with respect to the target area.

Preliminary results about the relation between temperatures and precipitation measured in Trentino and the weather types affecting the Alps are presented. Particular attention is given to the characterization of synoptic conditions leading to the occurrence of extreme weather events.