

AN INNERALPINE DOWNBURST, INNSBRUCK 21 JULY 2003

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Abstract: We detail and analyse an inneralpine downburst, which occurred on July 21st 2003 in the complex alpine territory of the Inn Valley in Tyrol, Austria. Strong, widespread wind gusts were registered along the Inn Valley and the downburst left considerable damage behind. The weather station at Innsbruck Airport recorded gusts close to 180 km/h, which exceeded the old wind speed record by many times. The goal of our research is to find out the important factors that boost strong downbursts in alpine regions. The other aim is to collect data from severe convection events for the database of scientific institutes developing climatology in the future. Besides the synoptic analysis of this event, the main focus in this case study is the mesoscale development and evolution of the thunderstorm. On the basis of data from radar, satellites, radiosondes and weather stations as well as phenological observations, the development and the track of the downburst could be explained. It was found that the particular orography of the Inn Valley had an important influence on the strength of the downburst.