

# **Heavy snowfall event on the Venetian Alps - 26/27 January 2006**

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This study describes a heavy snowfall event on the Venetian Alps, which caused snow fresh depth of 80/100 cm, locally 110/130 cm in the valley bottoms and under 1000/1500 m but not aloft (above 1500/1700 m), with only 30/60 cm. Why does this event present this snow distribution characteristic, when in others similar events, with the same synoptic configuration, the most abundant snow amounts were found aloft?

A particularity of this event consists in the dynamical structure: while low at 500 hPa, max potential vorticity and high ascending vertical motion went away to West, weather began to get worse. During the most disturbed phase the dynamical situation in the medium and high atmosphere doesn't permit to understand the intensity of phenomena.

If the upper level dynamical situation wasn't the explicative key, it is necessary to use boundary layer dynamical circulation and meteorological parameters: sounding of Udine and local data. The pertinent synoptic analysis often must be based on the upper level, but we lean to forget the boundary layer impact. Through the Equivalent Potential Temperature and Wet Bulb Potential Temperatures' analysis at 950, 925 and 850 hPa, we point out a possibility that moist and relative warm advection in the low layers reinforced cyclonic effect due to boundary layer anomaly with heavy snowfalls in the valleys bottoms and on the low slopes. In the present case the cyclonic propagation in the highest atmospheric level was contrasted by dynamical easing aloft. This hypothesis can be considered the best explanation for this event.