



Average snowcover density values in Eastern Alps mountain

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The Italian Avalanche Warning Services monitor the snow cover characteristics through networks evenly distributed all over the alpine chain.

Measurements of snow stratigraphy and density are very frequently performed with sampling rates of 1 –2 times per week.

Snow cover density values are used to compute the dimensions of the building roofs as well as to design avalanche barriers. Based on the measured snow densities the Electricity Board can predict the amount of water resources deriving from snow melt in high relieves drainage basins. In this work it was possible to compute characteristic density values of the snow cover in the Eastern Alps using the information contained in the database from the ARPA (Agenzia Regionale Protezione Ambiente)-Centro Valanghe di Arabba, and Ufficio Valanghe- Udine. Among the other things, this database includes 15 years of stratigraphic measurements.

More than 6,000 snow stratigraphic logs were analysed, in order to derive typical values as for geographical area, altitude, exposure, snow cover thickness and season. Computed values were compared to those established by the current Italian laws.

Eventually, experts identified and evaluated the correlations between the seasonal variations of the average snow density and the variations related to the snowfall rate in the period 1994-2008 in the Eastern Alps mountain range