

## **The study of snowpack in the Balneario de Panticosa: An unique location to study the transition from forested to alpine environments**

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Balneario de Panticosa is a unique location to observe and comprehend a wide variety of snow processes on different mountain environments (forest, subalpine and alpine). This site has elevations ranging from 1600 to 3050 meters above sea level, and is characterized by a long lasting snowpack along winter. Since 2011, the Pyrenean Institute of Ecology has maintained distinct research areas in this location applying state of the art technique to improve the comprehension of the interaction between the topography, the vegetation and the distinct meteorological events with the snowpack.

Several TLS winter campaigns were maintained from 2011 to 2015, which were initially focused to understanding small scale (1 to 20 m) snowpack distribution in view to tree canopy characteristics in the lowest elevation of this site. Then a very- long range TLS application along three snow seasons, aimed to comprehend the transition from forested to alpine environments of snowpack dynamics. From 2015 to 2018, four small test sites were established in different altitudinal bands with contrasted aspects were regularly visited to analyze spatio temporal differences of both the evolution of the snowpack and trees growth. Nowadays extensive UAV observations are maintained in this study area, aiming to face research issues not fully understood, as the impact on snow accumulation of the tree line in the transition to sub-alpine areas. This contribution briefly describes all the research activities accomplished in this unique mountain site, in which the 2022 INARCH meeting takes place.