



## **Tree-ring based reconstructions of snow avalanches in the Swiss Alps and the Argentinean Andes**

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Snow avalanches are a major natural hazard in many alpine regions around the world. Through the application of dendroecological techniques, we were able to reconstruct event dates and area affected by past snow-avalanche events. As a first approach, we selected a number of study sites in the Swiss Alps, where avalanche records are available for the past few centuries, and where conifers (*Picea abies*, *Larix decidua*) are the dominant tree species. Complementary sampling surveys were conducted in *Nothofagus pumilio*-dominated forests in the Argentinean Andes, where avalanche records are almost nonexistent. Conventional dendroecological techniques were used for the sampling procedure, sample preparation and further statistical analyses. Tree-ring indicators of snow avalanches such as reaction (compression or tension) wood formation, eccentricity variations in the stem, abrupt changes in growth, tree establishment and tree mortality were linked to documented avalanche events in the Alps and subsequently applied to construct tree-ring based avalanche chronologies in the Andes. Finally, reconstructed avalanche chronologies in the Andes were compared with regional climate data to determine the climatic conditions more strongly related to avalanche events.