



Terrestrial photography as a complementary measurement in weather stations for snow monitoring

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Snow monitoring constitutes a basic key to know snow behaviour and evolution, which have particular features in semiarid regions (i.e. highly strong spatiotemporal variability, and the occurrence of several accumulation-melting cycles throughout the year). On one hand, traditional snow observation, such as snow surveys and snow pillows have the inconvenience of a limited accessibility during snow season and the impossibility to cover a vast extension. On the other hand, satellite remote sensing techniques, largely employed in medium to large scale regional studies, has the disadvantage of a fixed spatial and temporal resolutions which in some cases are not able to reproduce snow processes at small scale.

An economic alternative is the use of terrestrial photography which scales are adapted to the study problem. At the microscale resolution permits the continuous monitoring of snow, adapting the resolution of the observation to the scales of the processes. Besides its use as raw observation datasets to calibrate and validate models' results, terrestrial photography constitutes valuable information to complement weather stations observations. It allows the discriminating possible mistakes in meteorological observations (i.e. overestimation on rain measurements) and a better understanding of snow behaviour against certain weather agents (i.e. blowing snow). Thus, terrestrial photography is a feasible and convenient technique to be included in weather monitoring stations in mountainous areas in semiarid regions.