

mAvalanche – smart avalanche forecasting with smartphones

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The common information channels through which the avalanche warning service in Switzerland acquires information include a network of automated weather and snow measurement stations and stationary observers. In the winter of 2008/09, an additional mobile observation network, called mAvalanche, was initiated. mAvalanche provides software for advanced mobile phones which allows sending georeferenced on-site observations directly from the field to the avalanche warning service. Here we present data from a two-year pilot phase during which a group of 32 mountain guides used mAvalanche. The spatial and temporal distribution of the totally 928 observations showed a significant increase in the mean altitude of the observations after mid-March, which reflects the preferences of backcountry skiers who aim at high-altitude regions in spring. In 73% of all mAvalanche observations, the estimations for the current avalanche danger were in accordance with the danger level forecasted by the avalanche warning service. In 21% of the observations, the mAvalanche observers considered the avalanche danger to be lower than the forecasted level, in 6% higher. The types and frequencies of deviations from the forecasted danger level did not differ significantly between the two winters, indicating that the number and quality of observations is sufficient to provide reliable and consistent information. Conclusively, mAvalanche proved to be a valuable tool for providing additional information to the avalanche warning service.