



A new transportable polarimetric X-band radar for accurate rainfall measurement in Alpine basins

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During past years the vulnerability of mountain areas to extreme rainfall events increased: this effect is in part due to global climate change, more significant over the Alps, and in part is due to the human activities and the territory usage. In those areas the rain fields usually show large variability both in time and in space, making difficult measurement with classical gauges. On the other hand rainfall estimation in alpine areas using classical C-band weather radar is often limited by several factors: beam blockage, poor visibility, strong ground clutter contamination. Measurements using compact X-band radar have been strongly limited in the past due to non negligible attenuation by rain. Here it is presented a new X-band radar fully polarimetric, transportable, with GPRS mobile data link: the use of polarimetric variables (in particular Kdp) and the reduced influence of ground clutter at X-band can significantly improve accuracy in rainfall estimation.