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Automatic Digital Photography for Monitoring Snow Cover Distribution, Redistribution and Duration in alpine Areas (Hinteres Langtal Cirque, Austria)

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Data on snow cover distribution and its dynamics caused by wind action, avalanching or melting with a high temporal resolution and from remote alpine areas are commonly difficult to obtain. However, such snow cover data deliver important information regarding the hydrological system of an alpine drainage catchment or might be important for studying the relationship between weather conditions and snow cover processes (e.g. snow avalanches). To address this monitoring problem at remote high-altitude study sites in southern Austrian alpine regions, an automatic digital camera system was designed and three such devices were constructed. The three devices are used since summer/autumn 2006 for monitoring three cirques in the Hohe and Niedere Tauern Range, Austria. These three cirques are investigated within the framework of a project focussing on the effects of climate change on high mountain environments (www.alpchange.at). This contribution focuses on data from the Hinteres Langtal Cirque (46˚59'N, 12˚47'E), Hohe Tauern Range where an automatic digital camera system operates since September 2006. Until late July 2007 317 daily images were collected at this cirque, covering the entire snow cover period. A meteorological station (measuring wind speed, wind direction, air temperature, air humidity and radiation) as well as numerous temperature dataloggers that monitor ground thermal conditions in the cirque provide valuable complementary data. The entire data set collected for the 317 day period allowed the analysis of the relationships between differ-

ent snow cover and climatic parameters. First comprehensive results will be presented.