



The borehole of Piz Boè (Dolomites, Eastern Italian Alps): first results

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In the framework of the Permanet Project (Alpine Space Programme) we chose the Piz Boè area (Sella Group, Dolomites, North-East Italy), at 2900 m a.s.l. to install an Automatic Weather Station (AWS) and to drill a new borehole to a depth of 30 m. In spring 2010, continuous bottom temperature of snow cover (BTS) measurements showed a Winter Equilibrium Temperature of about -4.0°C with a snow depth of 240 cm. Drilling was carried out in the Dolomites bedrock in July 2010; camera survey revealed a uniform bedrock, without evidencing any crack, ice or liquid water. In September an AWS was installed for measuring air temperature, relative humidity, snow depth wind velocity and direction, incoming and outgoing radiation (short and longwave) and ground thermal state with a thermistor chain of 16 sensors placed at 0.02, 0.3, 0.6, 1.0, 1.5, 2.0, 2.5, 3.0, 3.5, 4.5, 5.5, 10.0, 15.0, 20.0, 25.0, 30.0 m depth. In this poster we present the preliminary results of the first month of recording (15 Sept – 15 Oct 2010). The first 10 sensors (from 0.3 to 5.5 m) recorded positive values. Sensor at 5.5 m depth showed positive values, slightly increasing in the period under consideration, while at 10 m the temperature was about -0.5°C . Active layer was around 7.0-7.3 m thick, deepening to rather high air temperatures at the beginning of October. At the bottom of borehole, the temperature was about -0.13°C . At the surface (0.02 cm) and near surface (0.3 m), the temperatures were influenced by a light snowfall in the last decade of September and they were decreasing in the last days, due to the cooler air advection.