

Mont Blanc

Topcon on the highest mountain top



"Determining the height with centimetre precision"

"Providing accurate data to measure the mountaintop"

In July 2007 an expedition went to the top of the Mont Blanc to determine with centimetre precision the top of the highest European mountain. The expedition was organized by a team of six people; several alpine guides and technicians from the Studio topografico di Bisaccia (AV), in collaboration with GEOTOP Srl and TOPCON Europe Positioning BV,

The Mont Blanc, with its height of over 4.800 meters, is the highest mountain in Europe. It is situated in the Alps mountain range, on the watershed between the Italian Val d'Aosta (Val Veny and Val Ferret) and the French Savoia area (Chamonix valley).

Three hours measuring

On July 25th 2007, the survey was carried out in static mode, with a data rate of 5 seconds, by using both the GPS and the GLONASS satellite constellation tracking. The measuring session started at 13:48 and ended at 17:00, thus lasting 3h 12", with a total of 2304 epochs. In order to calculate the mountain top height, four known coordinate points were used. The Topcon HiPer PRO GPS+GLONASS receiver was used in the four apex of the known coordinate points, while for the mountain top point the latest Topcon GR-3 GPS+GLONASS+GALILEO was used.

Provide accurate data

The materialization of the point, not easy to get, considering both the height and the adverse environment, was performed by inserting an steel bar in the ice and directly screwing on the GPS antenna. This way the use of the tripod was avoided which could cause a positioning error. The above-described installation, may it last during the years with subsequent measures, could indeed provide accurate data to monitor the mountain top.

The height of the Mont Blanc top, of in total 4.808,75 meters, according to the latest official measurements obtained in December 2005, will be compared to the one obtained by the new calculations. The final data elaboration will be performed in cooperation with the University "POLITECNICO di TORINO".

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