



The Mount S. Matteo (Lombardy, Italian Alps) case: a serac ready to fall?

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Several crevasses appeared changing rapidly on the serac of the north face of Mount S. Matteo (Ortles-Cevedale Group, Italy) during spring 2005 and they were noticed by some mountaineers. This phenomenon suggested an high risk of a huge serac fall, so the Universities of Milan and Brescia together with operators of Italian Glaciological committee (CGI) and Lombardy Glaciological Service (SGL) started to survey the hanging. In May 2005 a measurement system was set up to check ice surface velocities, serac volume and shape changes and to try in forecasting the moment of the ice-fall. The instruments used for surveying the serac changes were a laser scanner (Riegl LMS-Z420i equipped with a Nikon D100 camera) and a total station (Leica Wilde T 1000); the first one was used for close-up surveys performed from a mountain top 3200 m high, the second instrument was used to monitor the serac from several measurement points located down-valley (from 2500 to 2900 m a.s.l.). While the laser scanner technique was adopted twice (May and September 2005), as it required the use of the helicopter, the total station measurements were instead performed more frequently from June to September 2005. The laser scanner data permitted to calculate the serac volume which resulted equal to c. 900,000 m³ to describe its morphology; the total station data allowed to know the displacements of the serac which reached maximum vertical value of c. 10 m and maximum horizontal value of c. 5 m in the period 20th July 2005 - 14th September 2005. Further deeper analysis of the topographical data collected will permit a better understanding and knowledge of the driving factors responsible for the serac evolution.

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