The recent evolution of Monte S. Matteo avalanching glacier (Ortles-Cevedale Group, Italy) as a contribution to the knowledge of the dynamics of this glacier type

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Avalanching glaciers may be affected by periodic or occasional falls of ice (by breaking-off mechanism) giving rise to tragic events (e.g. Allalingletscher, Switzerland, 1965; Huascaran, Peruvian Andes 1962 and 1970; Grandes Jorasses, Italy, 1993; Dzimarai-Khokh, Caucasus, 2002). These events caused an increasing interest in the instability of avalanching glaciers. This contribution comes into this context.
In summer 2003 a big fracture was observed to be on the North-West ridge of Monte S. Matteo (Forni Glacier, Ortles-Cevedale Group, Italy). As this phenomenon developed a big unstable ice-mass, starting from May 200, it was decided to survey Monte S. Matteo avalanching glacier (whose fall could involve the West sector of Forni Glacier thus representing a hazard for climbers, tourists, skiers and trekkers).
The monitoring campaign consisted in collecting photographs (from May 2005 to December 2006) and in surveying the ice mass by *total station* (from July to November 2005). In addition, to quantify the volume of the ice mass, in May 2005 a laser scanner survey was performed (the volume resulted c. 60.000 m^3).
Data acquired with *total station* permitted to calculate displacements and velocities of the unstable ice-mass. Summarizing the main results from the surveys carried out between the 20th of July and the 8th of November 2005, it resulted an average displacement of the ice- mass of 12.4±0.4 m, equal to 11.2±0.4 cm/day. The main flow direction was along the West ice mass sector.
During the whole period of observations the disaggregation (i.e.: the separation of unstable ice mass into smaller ice parts due to subprocesses of fracture – Pralong and Funk, 2006 –) occurred at the lower sector and at the lateral side of the unstable ice mass was substantial; the last photograph (it dates back 5th December 2006) shows an important mass reduction and therefore a lower level of danger. Presently the large crevasses characterizing the unstable ice-mass will probably cause further disaggregation events.