



## Constructing a time series for large landslides in Trentino (Italy) with $^{36}\text{Cl}$ exposure dating

S. Ivy-Ochs (1), S. Martin (2), P. Campedel (3), V. Alfimov (1), E. Andreotti (4), A. Viganò (5), G. Carugati (4), C. Vockenhuber (1), and S. Cocco (3)

(1) Ion Beam Physics, ETH, Switzerland (ivy@phys.ethz.ch), (2) Università di Padova, Padova, Italy, (3) Servizio Geologico della Provincia Autonoma di Trento, Trento, Italy, (4) Università dell'Insubria, Como, Italy, (5) Università di Trento, Trento, Italy

The Trentino province of NE Italy is characterized by numerous large landslides and rock avalanche deposits, notably in valleys that are rather densely inhabited. One may gain fundamental information for calculation of return times of slope collapses by surface exposure dating of boulders and scarp area bedrock. First investigations focus on the following landslides: Lavini di Marco (covering an area of 15.7 km<sup>2</sup>), Marocche di Dro (8.1 km<sup>2</sup>), Molveno (5.0 km<sup>2</sup>); Palone (2.5 km<sup>2</sup>), Castelpietra (0.4 km<sup>2</sup>), Marzola (12.5 km<sup>2</sup>). Field surveys that indicate multi-phase activity serve as a basis for sampling. Cosmogenic  $^{36}\text{Cl}$  was used due to the predominance of limestone and dolomite. In this presentation, interpretation of (in some cases scattered) age distributions at individual sites will be discussed, especially the frequency of pre-exposure. The distribution in time of the Trentino, mass movement events will be considered in light of what is known about paleoseismicity in the region, the timing of other large landslides in the Alps, and the sequence of climate variations during the Holocene.