



The ‘Mountain Risks’ research project: challenges in hazard analysis.

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The ‘Mountain Risks’ Project intends to develop an advanced understanding of how mountain hydro-geomorphological processes behave and to apply this knowledge to long-term cohabitation with such hazards. The objective of this poster is to present the issues addressed by the project on mountain hazard analysis.

There are a number of important ‘gaps’ in the assessment of mountain hazards. In particular, the temporal frequency and magnitude of the processes involved have to be studied in greater detail to further the quantitative and dynamic assessment of the hazard. To date this type of information is very limited within most hazard maps largely due to the lack of temporal data. Therefore, modern techniques of data collection and analysis, advanced analytical methods, as well as innovative computer simulation results, have to be introduced into the hazard assessment procedures to assess critical triggering thresholds and evaluate return periods. To develop these techniques, a better understanding of the physics of the processes is crucial.

On the basis of this, the ‘hazard analysis’ theme of the project will address the following actions:

- Develop and harmonise procedures for the identification, location and quantification of the processes creating mountain risk;
- Improve the prediction of the spatial extent and the velocity of extreme phenomena (e.g. estimation of runout distances and impact velocities);
- Highlight critical factors involved in the short-term behaviour (crises) and long-term behaviour (climate and land use change) of the processes;

- Develop techniques for assessing the temporal probability and the magnitude of the hydro-geomorphological events, determine and map the hazard and validate these outputs;
- Define criteria for establishing representative and reliable monitoring networks for early warning and for interpreting monitoring data.

These actions will be applied on highly documented case studies, located in five European countries (France, Italy, Swiss, Germany and Spain) where mountain hazards are currently evident.