



GeoClimAlp (Geomorphological impacts of Climate change in the Alps) operates mainly in the Italian Alps. The intent is to deepen and improve the knowledge on the role of climate change in the morphogenesis of the alpine environment in general and of high-altitude environments in particular, with a focus on natural instability processes.



Research

- Role of ongoing climate change in the morphogenesis of the glacial/periglacial areas and related hazards;
- Documentation of natural instability processes in the Alps, with particular attention to processes that occur in glacial and periglacial areas;
- Effect of climate change on the triggering thresholds of landslides in the Alps and on the cryosphere (including permafrost) degradation;
- Climatic conditions (especially temperature) triggering of natural instability processes in the Alps, with particular regard at high-elevation sites;
- Evolution of Alpine glaciers in the last 150 years (post LIA) in relation to topoclimatic conditions and related impacts;
- Advances in temperature measurement at high-elevation sites by means of sensors with known uncertainty of measurements.



Facilities

- 1 experimental and instrumented glacial basin;
- 1 climate data quality laboratory;
- Field equipment;
- Glacial, periglacial and mountain digital resources;
- Hystorical documents and maps of the Alps.



National Research Council of Italy
Research Institute for
Geo-hydrological Protection

GeoClimAlp
research group



RiST2 Project:

Scientific and Technological Research
in the Bessanese glacial basin
(Balme, TO)

Our experimental glacial basin

The RiST Project uses the Bessanese glacial basin as an open air experimental laboratory and studies the variability of the thermal conditions of different materials (air, rock, debris, soil, ice, water) that are involved in morphodynamic processes. This information will be used to deepen the knowledge on the relationship between climate change and natural instability processes that occur at high-elevation sites. The main innovative aspects are:

- Application of the metrological traceability of measurements;
- Measuring temperature by means of sensors/acquisition chains with known uncertainty;
- Use of miniaturized sensors with low environmental impact;
- Glacial basin monitoring through Livecam 360° PANOMAX (2,775 m a.s.l.).

<https://bessanese.panomax.com/>

- The first Livecam installed in the Piedmont Region;
- The first Livecam installed by CNR for scientific and research purposes ;
- Observation and monitoring of the glacial basin in “near real-time”;
- Possibility to see past images;
- Free use for everybody (for non-profit purposes).



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