
Earthquakes in Switzerland

The Swiss Seismological Service at ETH Zurich (SED) records on average ten earthquakes per year that are felt by the population. These are related to the large-scale movements of the African and European continents, which also gave rise to the Alps. The stress that is induced in the Earth's crust by the collision between the continental plates of Africa and Europe is released in the form of earthquakes.

The last earthquake that caused damage in Switzerland occurred in 1991. Certain regions of the country show greater seismic activity than others. Those most at risk are the Basel region, the Valais, Central Switzerland, the St. Gall Rhine Valley, Mittelbünden and the Engadine.

Major earthquakes have occurred repeatedly throughout Switzerland's history: 1356 in Basel, 1855 in Visp and 1946 in Sierre. The Swiss Seismological Service has published a historic earthquake catalogue of Switzerland, which lists all known quakes since the year 250 AD.

Earthquakes in the history of the Valais

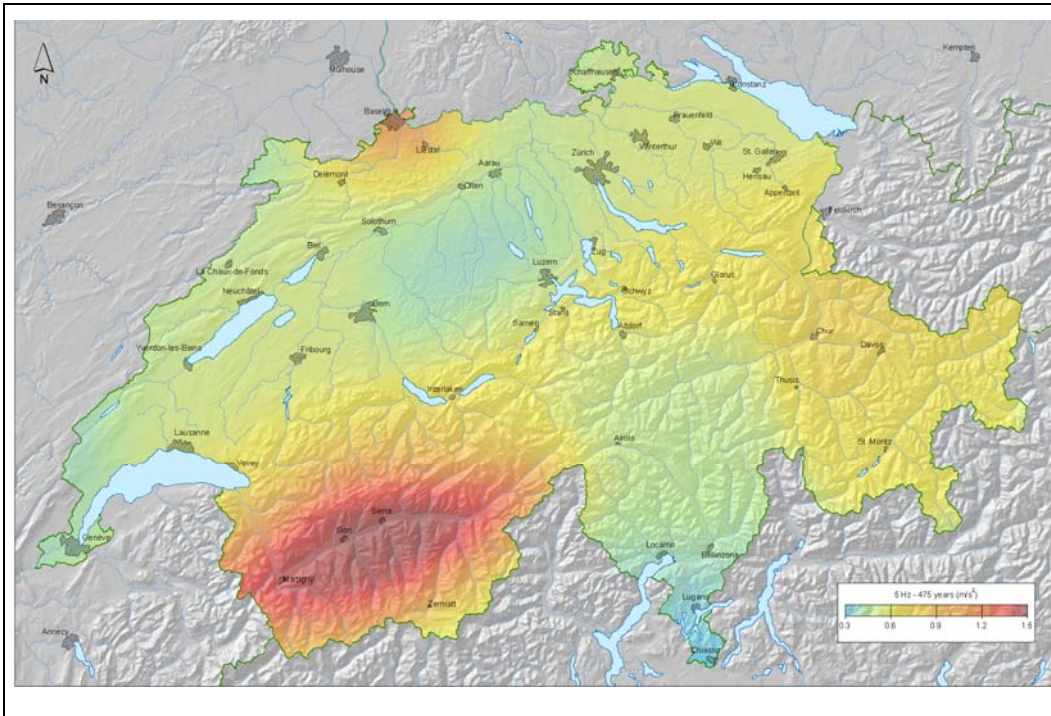
The Valais is one of the regions with the highest probability of a major earthquake. Earthquakes have been known in the history of this canton since 1500. Among the most powerful are those of 1524 (Ardon), 1584 (Aigle), 1755 (Brig), 1837 (Birgisch), 1855 (Visp), 1905 (Mont Blanc), 1946 (Sierre-Ayent) and 1960 (Brig). The events of Ardon, Aigle and Visp in particular caused severe damage. The region of Visp-Brig is the most frequently shaken area of the Valais.

Local effects and hazard mitigation

In addition to the earthquake's strength and the distance from the epicentre, the nature of the local subsoil has a great influence on the damage caused by a quake. In the Rhone valley, for example, the loose alluvial and lake deposits can amplify the earthquake waves and lead to more intense ground shaking than along the bordering mountain slopes. To understand the consequences of these effects for past and future earthquakes, the SED simulates the propagation of the seismic waves on a computer and compares them with recordings from the seismic networks.

A reliable prediction of earthquakes will remain impossible in the foreseeable future. Therefore, preventive measures against the consequences of earthquakes are important. Such measures include appropriate regional development planning

and earthquake-resistant construction. In this respect, the Valais assumes a pioneering role in Switzerland. The canton has passed legislation that declares the Earthquake Building Standards (SIA 261) to be mandatory.



Earthquake hazard map of Switzerland, 2004,
published by the Swiss Seismological Service of ETH Zurich (SED)

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