

## Landslide Area Brienz-Brinzauls

Permanent monitoring of an active landslide area with various sensors



The Brienzler landslide in the canton of Graubünden (CH) has been surveyed and its movements monitored for around 100 years. In recent years, these movements have increased significantly. In places, the slopes above the village of Brienz are sliding at a rate of **more than 5 metres per year**, which has been confirmed by previous measurements.

In order to record changes in the landslide area in the shortest possible time, the project managers at the Office for Forests and Natural Hazards have been relying on **12 TEDAMOS GNSS** measuring systems since mid-July 2019, which were put into operation in three stages. The self-sufficient, solar-powered measuring systems enable the project managers to reliably monitor the movements at the 11 sensor locations in the **millimetre range, all year round and regardless of the weather**, in relation to a local GNSS reference station, which was installed a few kilometres from the landslide area in a stable zone.

The causes of such landslides usually lie in water-bearing layers in the subsoil. In order to monitor the water pressures in these layers, we installed a total of **8 automatic pore water pressure and piezometer sensors** in 6 boreholes in spring 2023.

- 📍 Brienz (GR), Switzerland
- 👤 Kanton Graubünden, Amt für Wald und Naturgefahren
- 🕒 2019 - ...

### Services

- ◆ Supply, installation and commissioning of autonomous TEDAMOS GNSS sensors
- ◆ Supply, installation and commissioning of automatic measuring pore water pressure and piezometer sensors
- ◆ Automatic monitoring incl. alarming with high-precision 1h, 4h and 24h solutions.
- ◆ Online access to current measured values via web-based customer portal.

### Technologies

- ◆ 12 solar-powered TEDAMOS GNSS sensors (GSM mobile phone data communication)
- ◆ 8 pore water pressure and piezometer sensors
- ◆ Web-based, password-protected customer portal with 24/7 access