

Pegasus Deployment Cliffside in Gaspésie, QC

THE PROJECT

A joint initiative between Prof Francis Gauthier from the Laboratoire de géomorphologie et de gestion des risques en montagne (LGGRM) at the Université du Québec à Rimouski (UQAR) and Prof Giroux from the Institut national de la recherche scientifique (INRS), is designed to gain a better understanding of the waterflow mechanism behind the rockface and the corresponding impact on rockslides.

THE CHALLENGE

Size, Weight and Power are always important considerations in a portable deployment but when your station is perched on the side of a cliff, 300 ft. from the ground, the benefits of lightweight, compact instrumentation are only heightened. The ultra-lightweight and compact Pegasus was a natural fit for the challenging deployment location, which could only be reached by rappelling down the cliff to the station 300 ft above the ground. The ability to pre-configure station profiles and then quickly apply them via the mobile app, also minimized the time spent, literally, hanging out at the deployment site.

THE SOLUTION

The seismic stations made use of the versatile sensor and power compatibility of the Pegasus system to combine geophones, batteries and solar power for year-round monitoring. The configurability of the built-for-science Pegasus was also a factor in the instrument selection as the experiment required the ability to set the gain and use high sample rate, while providing insights into complete station health information, such as the voltage draw.

To harvest the data, Nanometrics provided a portable harvesting pod as it was the perfect complement to the low SWaP requirements of the stations. The addition of the Data Vault allowed the INRS team to minimize the amount of equipment they carried while rappelling down the side of the cliff, instead of bringing along a laptop to harvest the data they could simply slip the ultra-low SWaP Data vault into a pocket.

While the project is ongoing at this time, the first harvests of data have shown promising results that will provide new insights into understanding and mitigating rockslides in the area.



Pegasus Digitizer & Mobile App



Prof Bernard Giroux from the Institut national de la recherche scientifique (INRS) is shown holding a Portable Harvester connected to a Pegasus Digitizer.