www.gaiacode.com

The World's First Hybrid Seismometer from GaiaCode

With the newly designed PICO three component broadband feedback instrument Gaiacode is introducing the first hybrid seismometer in the world. Small, lightweight, versatile and easy to install, PICO sets a new standard for all seismic measurements at higher frequencies, without compromising the performance in the longer period teleseismic band.

Suited for rapid deployments in temporary installations, PICO can also be used in array configurations or in more permanent networks.

What is a hybrid seismometer?

Typically, the output of seismic instruments is proportional either to the velocity or the acceleration of ground motions. Seismometers with velocity outputs are mostly used for measuring weak motions like seismic waves stemming from earthquakes at regional or teleseismic distances. On the other hand, instruments with acceleration output record strong motions and are commonly called accelerometers.

PICOs hybrid response combines the best of both worlds, by simultaneously providing two analogue outputs: one proportional to the velocity, the other to the acceleration of the ground motion. This approach has the advantage that over the whole passband both the rich information content of a typical acceleration response can be recorded without losing the sensitivity of a velocity proportional weak motion signal.

How do we get the hybrid response of the PICO?

Gaiacode achieves this unique response characteristic by adding specially designed circuitry to the mechanical side of the PICO before its signal gets processed in its feedback loop. Adding such circuitry allows us also to remotely change the low frequency cutoff (3dB) points without having to physically remove the seismometer from the installation. We offer eight different responses with low frequency cutoff points between 120 sec and 1 sec.

The instruments are delivered with a Gaiacode designed rotatable, waterproof connector (https://www.gaiacode.com/news/item/95-a-new-type-of-connector). Its position can be adjusted over a wide range of angles up to 270 degrees. This flexibility allows for easy installation even in postholes or other tight locations.