



## **Dynamic range measurements of multi-channel digitizers**

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Current high resolution seismograph systems are specifically designed to record seismic signals with a large range of amplitudes in a broad frequency band. The choice for a particular type of sensor or digitizer is usually driven by constraints on the frequency band and the amplitude range of interest. Not only for selection criteria it is important to have this type of information available, but also in the process of data interpretation.

The dynamic range of multi-channel digitizers can be estimated as function of frequency, by applying coherency analysis on recordings of a common input signal. The technique resolves the self-noise of each digitizer and identifies the frequency range in which the digitizer can be used without precaution. As a consequence the method also reveals under which conditions the interpretation of the data may be biased by the recording system.

Typical seismological applications in which this kind of information must be considered are the measurement of instrumental (sensors) self-noise and the interpretation of seismic background noise. This poster will focus on the above technique and discusses the implications for data interpretation.