



Cascadia, an ultracompact seismic instrument with over 200dB of dynamic range

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Integration of geophysical instrumentation is clearly a way to lower overall station cost, make installations less complex, reduce installation time, increase station utility and value to a wider group of researchers, data miners and monitoring groups. Initiatives to expand early earthquake warning networks and observatories can use these savings for increasing station density. Integration of mature instrument systems such as broadband sensors and accelerometers used in strong motion studies has to be done with care to preserve the low noise and low frequency performance while providing over 200dB of dynamic range. Understanding the instrument complexities and deployment challenges allows the engineering teams to optimize the packaging to make installation and servicing cost effective, simple, routine and ultimately more reliable. We discuss early results from testing both in the lab and in the field of a newly released instrument called the Cascadia that integrates a broadband seismometer with a class A (USGS rating) accelerometer in a small stainless steel sonde suited for dense arrays in either ad hoc direct bury field deployments or in observatory quality shallow boreholes.