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Cabled Array Winched Profiler Data for Improved Hydroacoustic Analyses

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The Ocean Observatories Initiative Cabled Array (OOI-CA) commenced operation in 2014 with two trunk cables extending offshore from the central Oregon Coast, that incorporate multiple science nodes which host approximately 140 commercial and custom oceanographic instruments. With an operational life of 25 years, this undersea network delivers ample power and real-time data acquisition to support sustained, continuous observations of a wide range of oceanographic parameters over long periods of time. While many of these instruments are installed on the seafloor, the Cabled Array includes three novel winched profilers, designed and constructed at APL-UW, located on subsea moorings on the continental shelf, the abyssal plain, and flanking an active undersea volcano. These highly capable profilers can each host up to 15 instruments and transit vertically from 200 m to just below the surface up to nine times per day, unattended for one year between servicing missions. Among the data provided by these systems are CTD observations made at 1 Hz. Temperature and salinity profiles will be presented over the five-year operation of these profilers and related to the large scale oceanography off the coast of Oregon. Adding ancillary instrumentation to CTBTO assets could allow similar insights in other oceans.

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