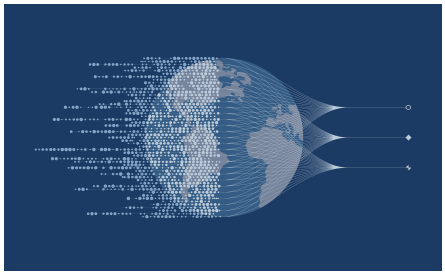

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experiment for sustainable pressure observation at the seafloor

A pressure gauge at the seafloor is key sensing instrument for geophysics and oceanography. Pressure change over time can be consent to the seafloor deformation associated with plate convergence in the plate subduction zone or the magma injection near the submarine volcanoes etc. It is also suggested that pressure change at the seafloor can be partly reflected by the ocean current variations, e.g., the Kuroshio merenda in Japan. On the other hand, sensor drift, i.e., offset from the standard pressure is observed in pressure gauge, whose rate is sometimes larger than the *in-situ* true pressure change. Therefore, a stable pressure gauge should be selected for long-term continuous observation to perform quantitative pressure measurement. The Japan Agency for Marine-Earth Science and Technology (JAMSTEC) has developed the seafloor observatories network known as DONET, long-term borehole observatory system (LTBMS), or campaign-typed pressure sensing system in the past, which are composed of pressure gauges. All pressure gauges were pressurized by a pressure balance with equivalent static pressure to an installed water depth before deployment. This experimental procedure allowed us to determine which pressure gauge was best suited for *in-situ* measurement. Screening of the better sensors can reflect to the more sustainable *in-situ* observation.

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