**A Tropical Pacific Observing System for 2020 and beyond (TPOS 2020).**

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| The international TPOS 2020 Project arose out of a Tropical Pacific Observing System review and workshop in January 2014, which discussed challenges in sustaining the TAO-TRITON array during 2012-2013, among other things. The Project is aimed at redesigning the observing system, including the tropical Pacific arrays, in light of new scientific understanding and new ocean technology since its original design in the 1980s-90s. Observing and understanding ENSO remains a fundamental motivation, extending to biogeochemical phenomena, to processes on smaller scales such as diurnal mixing that may rectify into the low frequency, and to the interaction of the coupled boundary layers of the upper ocean and lower atmosphere. The primary stakeholders remain the operational climate prediction centers and the design will include support for research into physical processes, especially those not well represented in current-generation climate models. Current-generation forecast systems (data assimilation and the model physics) have a number of challenges to make effective use of observations, thus the modeling centers are well-represented in the TPOS 2020 structure and our sampling is targeted to where the forecasts systems need guidance for improvement While the design will look at options for evolution of the present arrays, the long climate records built up at mooring sites, repeated ship surveys, and island stations are fundamental to detecting and diagnosing both natural climate variability and climate change. Task teams have been established in specific topic areas, and a number of focused research projects are being developed to support the redesign process. An interim report will be released mid-2016 with the opportunity for community comment; it will be presented to agencies and other stakeholders for review and input. This presentation will discuss the motivation, guiding principles, and potential changes of direction for the tropical Pacific observing system.  |