# A New World Ocean Temperature Profile Product (v0.1): The International Quality Controlled Ocean Database (IQuOD)

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Reliable long-term ocean subsurface temperature measurements are critical for understanding changes in the Earth's energy imbalance, ocean temperature, sea level, and also separating natural variability from anthropogenic factors.

The International Quality Controlled Ocean Database (IQuOD, www.iquod.org), with support from programmes, such as CLIVAR, SCOR and IODE, is the first internationally-coordinated community effort to enhance the content, utility, and quality of the global historical profile database of subsurface temperature observations, and with the potential to expand to other oceanographic variables (salinity, oxygen, etc.).

Progress to date includes inclusion of uncertainty estimates to temperature profiles on each depth (pressure) and intelligent metadata for unknown probe types (identified through a deterministic approach using country, year, depth, etc, Palmer et al., 2018) for a major instrument of the historical record. This initial progress has been recently released as part of an interim product, IQuOD v0.1, which is now part of the existing NOAA's World Ocean Database (WOD) with IQuOD quality flags. Users can publicly download this WOD/IQuODv0.1 through the WODselect system in a Climate-Forecast (CF) compliant netCDF ragged array format. This interim product will also be distributed to the public via other data centers in Australia, France, Germany, Japan and the UK.

Additional efforts are underway to establish an internationally-agreed optimal set of automatic quality control procedures (https://github.com/IQuOD/AutoQC) and to incorporate machine learning into expert quality control. These ongoing efforts will be published as part of future IQuOD interim product releases.

To download and view the documentation for IQuOD v0.1 profile dataset, please visit:

https://data.nodc.noaa.gov/cgi-bin/iso?id=gov.noaa.nodc:0170893

CLIVAR Global synthesis and observations panel: http://www.clivar.org/clivar-panels/gsop
SCOR: http://www.scor-int.org/SCOR_WGs_WG148.htm
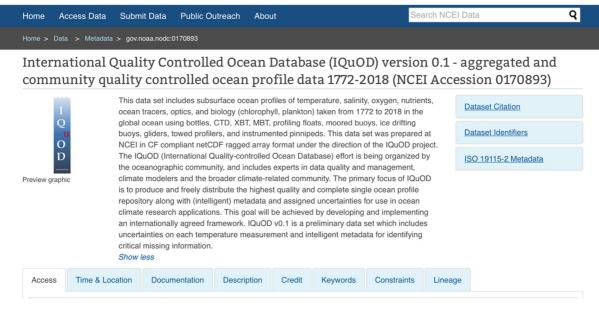IODE: https://www.iode.org/index.php?option=com_content&view=article&id=461&Itemid=100199

*Figure 1: NOAA'S NCEI landing page for IQuOD v0.1.*

**References :**

Palmer, M., T. Boyer, R. Cowley, S. Kizu, F. Reseghetti, T. Suzuki, and A. Thresher, 2018: An algorithm for classifying unknown expendable bathythermograph (XBT) instruments based on existing meta data. J. Atmos. Oceanic Technol. doi:10.1175/JTECH-D-17-0129.1, https://journals.ametsoc.org/doi/abs/10.1175/JTECH-D-17-0129.1