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New and improved data products from the Permanent Service for Mean Sea Level (PSMSL)

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The Permanent Service for Mean Sea Level (PSMSL) is the internationally recognised global sea level data bank for long term sea level change information from tide gauges. Established in 1933, the PSMSL continues to be responsible for the collection, publication, analysis and interpretation of sea level data. The PSMSL operates under the auspices of the International Council for Science (ICSU) and is one of the main data centres for both the International Association for the Physical Sciences of the Oceans (IAPSO) and the International Association of Geodesy (IAG). The PSMSL continues to work closely with other members of the sea level community through the Intergovernmental Oceanographic Commission's Global Sea Level Observing System (GLOSS).

Currently, the PSMSL data bank for monthly and annual sea level data holds over 65,000 station-years of data from over 2200 stations. Data from each site are carefully quality controlled and, wherever possible, reduced to a common datum, whose stability is monitored through a network of geodetic benchmarks. Last year, the PSMSL also made available a data bank of measurements taken from in-situ ocean bottom pressure recorders from over 60 locations across the globe.

Here, we present an overview of the data available at the PSMSL, and describe some of the ongoing work that aims to provide more information to users of our data. In particular, we describe the ongoing work with the Système d'Observation du Niveau des Eaux Littorales (SONEL) to use measurements from continuous GNSS records located near tide gauges to provide PSMSL data within a geocentric reference frame. We also highlight changes to the method used to present estimated sea level trends to account for seasonal cycles and autocorrelation in the data, and provide an estimate of the error of the trend.