



The Continuous Vertical Datum for Canadian Waters Project: Status report and update

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Canadian Hydrographic Service (CHS) has developed the Continuous Vertical Datum for Canadian Waters (CVDCW) project in collaboration with Canadian Geodetic Survey (CGS). The goal of the CVDCW is to develop a surface connecting chart datum (CD) to a national geodetic reference frame which captures the relevant spatial variability as modeled by integrating ocean models, water levels, GPS observations, sea level trends, satellite altimetry, and a geoid model. The CVDCW's CD surface will define a new hydrographic datum for Canada; other CVDCW surfaces (e.g. low water, high water) will provide fundamental information for coastal studies, climate change adaptation, and the definition of the Canadian shoreline and offshore boundaries.

The team has developed a national approach which is flexible enough to adapt to regional differences and permits the integration of new input data and methods as they become available. Given the length of the Canadian shoreline and the large-scale approach of the CVDCW, many aspects of our method are innovative and have not, to our knowledge, been used by other hydrographic organizations.

A version of the CVDCW is available for the Arctic and Hudson Bay, and the CVDCW will soon be completed for other regions. Realizations of the CVDCW are expected to evolve quickly in the next few years, as a series of prototypes are validated against new GPS and gauge observations and tested in the reduction of soundings.