



Development and Challenges towards building Canada's Digital Twins of the Ocean: Observations, Modelling, Forecasting, Analyses and Applications

Stakeholders in the Canadian marine sector, including government departments, academia and private sector, are actively working on development of Digital Twins of the Ocean (DTO). Activities include building data sharing platforms, such as CIOOS (Canadian Integrated Ocean Observing Systems) and developing global and regional numerical models for applications such as aquaculture, fisheries management, and climate change studies. While efforts are being made to link ocean models used for operational and research purposes with end-user focussed applications and platforms to build Canada's Digital Twins of the Ocean, we still face considerable challenges in connecting different components so that observations and advanced models can be used in integrated platforms to directly support decision making. Here, we will present the current observational and modeling effort in Canada, challenges we are facing, and the steps that we are taking to aid building Digital Twins of the Ocean in Canada.

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