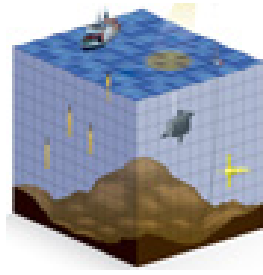


## Joint ECMWF/OceanPredict workshop on Advances in Ocean Data Assimilation



Contribution ID: 54

Type: **Poster presentation**

### **Assimilation of multi-platform observations into two-way coupled physical-biogeochemical model on the North-West European Shelf**

We present recent developments in (pre-)operational CMEMS system on the North-West European Shelf (NWES). In the presented work, the system has been expanded to assimilate physical and biogeochemical observations from multiple platforms (satellite, gliders). The multi-platform assimilative system has been tested in series of experiments and it has been demonstrated that it has the capability to simultaneously improve all the assimilated variables. To strengthen the connection between physics and biogeochemistry we implemented a bio-optical module to force both physical and biogeochemical part of the model, introducing a dynamical feedback from biogeochemistry to physics (we will further call this “two-way coupled model”). We demonstrate that the two-way coupled model improves the simulated biogeochemistry by correcting the timing of the phytoplankton spring bloom. We recommend to use the two-way coupled model to inform a future strongly coupled DA system on the NWES.

#### **Which theme does your abstract refer to?**

Coupled data assimilation (ocean, atmosphere, sea-ice, waves, biogeochemistry, etc)

**Primary author:** SKAKALA, Jozef (Plymouth Marine Laboratory)

**Co-authors:** Dr BRUGGEMAN, Jorn (Plymouth Marine Laboratory); FORD, David (Met Office); Dr CIAVATTA, Stefano (Plymouth Marine Laboratory)

**Presenter:** SKAKALA, Jozef (Plymouth Marine Laboratory)

**Session Classification:** Poster session 1

**Track Classification:** Coupled data assimilation