Improving the knowledge of sub-surface temperature, salinity and fluorescence variability patterns on the Southern Coast of Galicia

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DATA:

In 2008, the Instituto Español de Oceanografía (IEO) has installed a thermosalinometer (TSG) on board of R/V J.M. Navaz that operates on Galician coastal waters. Weekly, it covers the area between Vigo and Muros in the framework of an harmful algal bloom monitoring. High resolution and quality coastal data are very important in order to develop accurate behavior models. The TSG continuously measures the sea subsurface salinity, temperature, and fluorescence along the ships tracks.

Some results are systematically disseminated throughout the web www.vi.ieo.es. Permanent archive is made at IEO DataCenter after a detailed quality check putting also a special effort in filling correct metadata information that will allow a future reuse of data. Both the delayed mode quality check and the metadata give added value to the original TSG measures.

METHOD:

Data-Interpolating Variational Analysis (DIVA) allows the spatial interpolation of data in an optimal way, taking into account oceanographic features as coastlines and inlets[*].

Calculations are optimized and rely on a finite element resolution and the software allows optimizing the analysis parameters, checking for duplicates and performing quality controls.

Example of collected data and DIVA mesh for the salinity interpolation on the working area
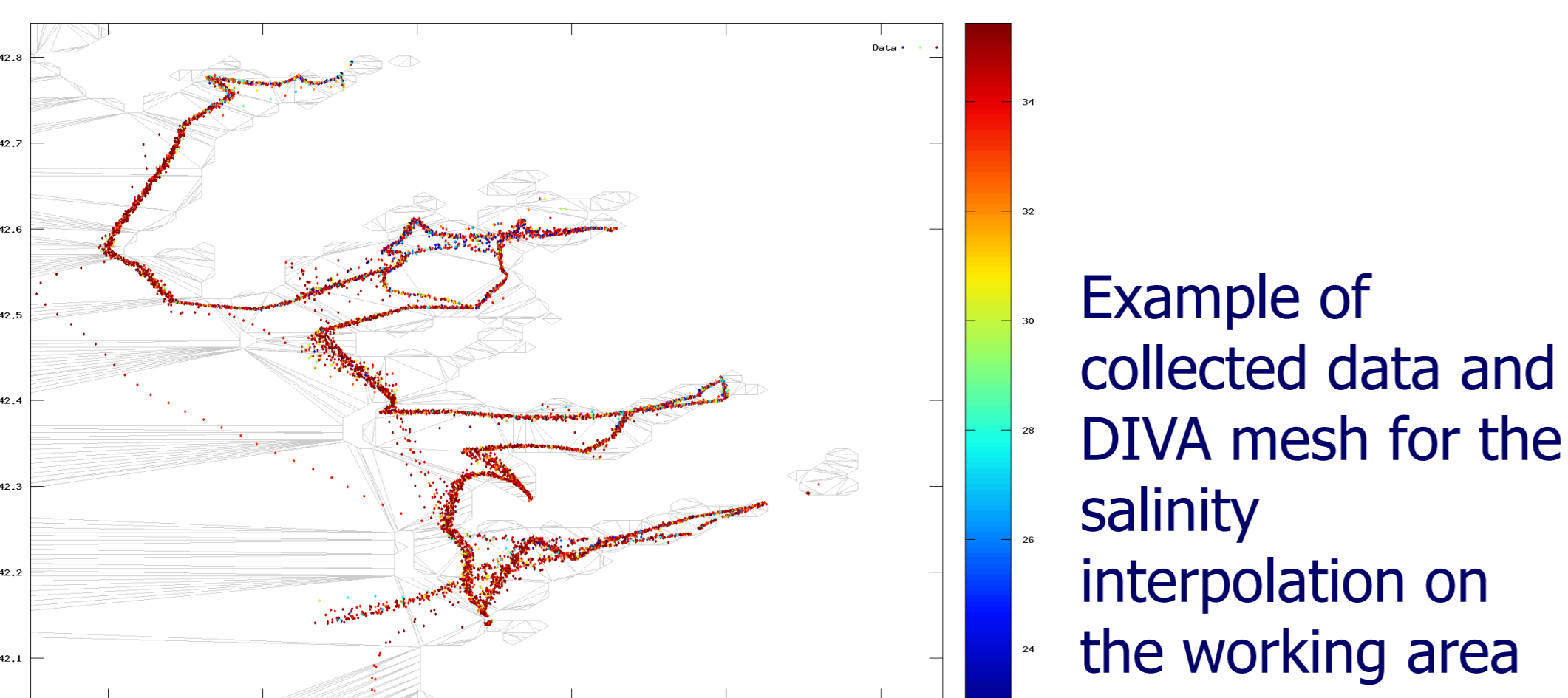
RESULTS:

Monthly variability has been calculated as well as seasonal and annual ones. Differences can be appreciated between the inner part of the inlets and the open sea areas.

These climatological results, that are systematically going to be updated, can be useful not only for scientific research but also for coastal management activities.
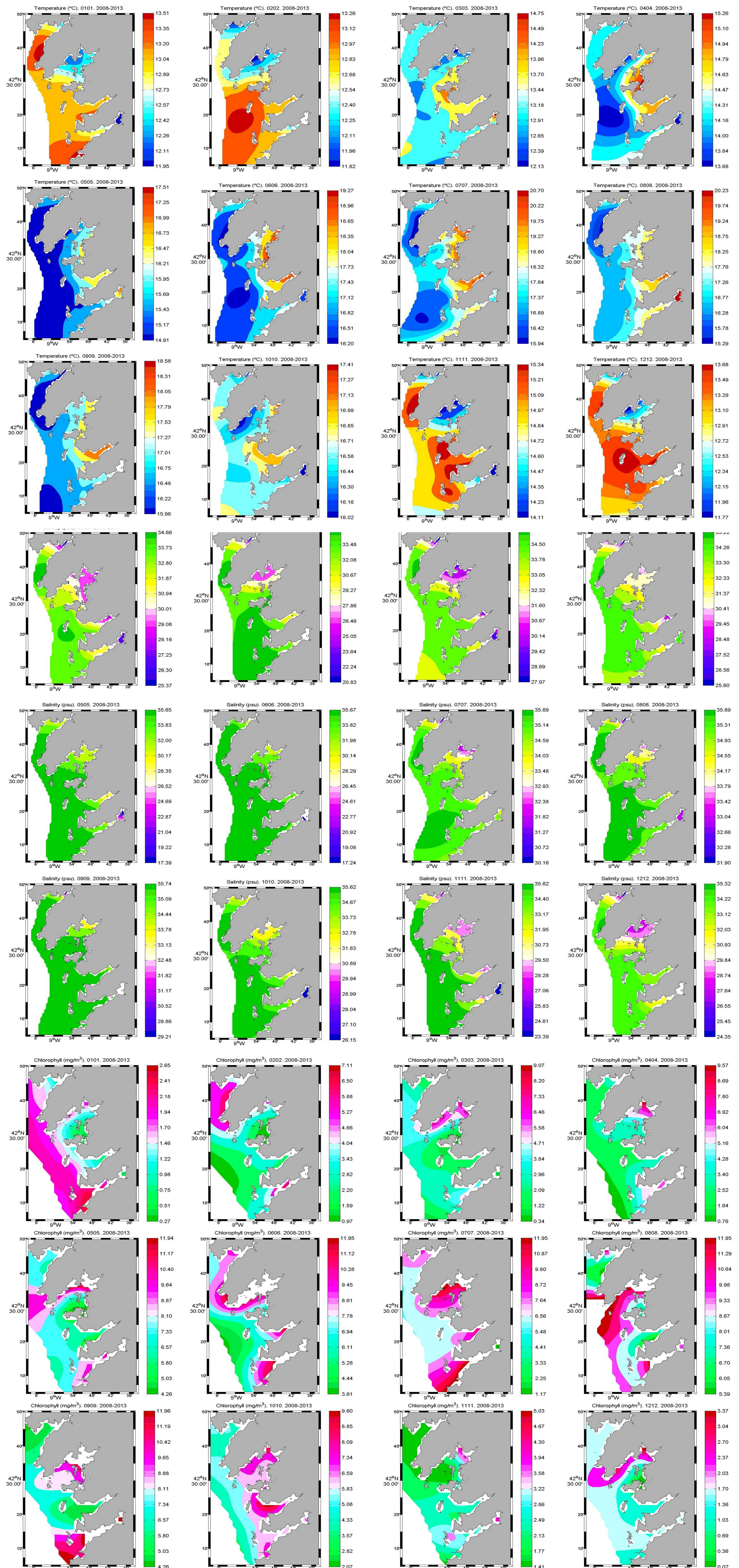
Bibliography
(*) Troupin, C., A.Barth, D.Sirjacobs, M.Ouberdous, JM.Brankart, P.Brasseur, M.Rixen, A.Alvera-Azcárate, M.Belounis, A.Capet, F.Lenartz, ME.Toussaint, JM.Beckers. Generation of analysis and consistent error fields using the Data Interpolating Variational Analysis (Diva). Ocean Modelling, 2012, vol 52-53, 90-101, doi 10.1016/j.ocemod.2012.05.002

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