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Development of the *Diva* tool for the interpolation of oceanic data

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In ocean sciences, in situ data are sparsely distributed in space and time, and their number is rather small relative to the underlying length-scales. From these sparse observations, a frequent operation consists in generating fields on a regular grid, either through interpolation or approximation of the observations.

In order to account for the sparse distribution and for the errors that affect the measurements, the Variational Interpolation Method was developed in the early 1990's and improved until nowadays in the Data-Interpolating Variational Analysis (*Diva*) tool. The method has been applied to produce climatologies for various regions of the World Ocean (Mediterranean, Baltic, Arctic, Adriatic, ... Seas) and for different variables (temperature, salinity, phosphate concentrations, ...).

In this work we present the evolution with time and the latest additions to the Diva tool:

- the formulation of the method,
- the objective determination of the parameters,
- the estimation of the error field,
- the web-interface.