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Objective analysis of biological data from P.O.E.M. Cruises

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Objective analysis is essentially an interpolation technique used to estimate a given physical quantity at points where there are no measurements, from data available at different locations. This technique is based on the Gauss Markov theorem which gives an expression for the least square error linear estimate of variables, given the measurements at a limited number of data points. In order to have a better correlation function the statistical Baysean theory could be applied to experimental data.

The application of these techniques are shown in processing the P.O.E.M. cruises data (POEM01 10/21-11/8 85, POEM03 11/1-11/14 86, POEM05 8/31-9/14 87) to produce maps of the Ionian distribution of O_2 , $N\text{-}NO_3$, $N\text{-}NO_2$, $N\text{-}NH_3$, $P\text{-}PO_4$, $Si\text{-}SiO_4$, chlorophyll and total suspended matter.

The typical objective analysis maps will be compared with the dynamic fields obtained from the oceanographic data of the same campaigns.