A hydrographic and biochemical climatology of the Mediterranean and the Black Seas: some statistical pitfalls

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The aim of the MEDAR/MEDATLAS II project was to archive and rescue multi-disciplinary in-situ hydrographic and biochemical data of the Mediterranean and the Black Seas through a wide cooperation of countries and to produce a climatological atlas of 12 core parameters, which include temperature and salinity, dissolved oxygen, hydrogen sulfure, alkalinity, phosphate, ammonium, nitrite, nitrate, silicate, chlorophyll and pH. Gridded fields have been computed using the Variational Inverse Model and calibrated by Generalised Cross Validation, by making usual assumptions on the statistical distribution of data and errors. They have been produced for both entire Mediterranean and Black Seas and several additional sub-basins including the Alboran Sea, the Balearic Sea, the Gulf of Lions and the Ligurian Sea, the Sicily Strait, the Adriatic Sea, the Aegean Sea, the Marmara Sea and the Danube shelf area at climatic, seasonal and monthly scale when relevant. Inter-annual and decadal variability of T/S for both basins has been computed as well. The resulting atlas is made available free of charge at http://modb.oce.ulg.ac.be/Medar and on CD-ROM. We review here the different biases that occur locally when one of the statistical hypothesis is not satisfied, we assess the quality of the climatology and propose further possible improvements to the analysis method.

REFERENCES

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