



## Comparison between in situ and satellite surface temperature in the Western Mediterranean Sea

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A comparison between satellite and in situ sea surface temperature (SST) data in the Western Mediterranean Sea in 1999 is realised. The aim of this study is to better understand the differences between these two data sets, in order to realise merged maps of SST using satellite and in situ data. When merging temperature from different platforms, it is crucial to take the expected RMS error of the observations into account and to correct for possible biases. Advanced Very High Resolution Radiometer (AVHRR) SST day-time and night-time satellite data are used, and the in situ data have been obtained from various databases (World Ocean Database'05, Coriolis, Medar/Medatlas and ICES). Statistics about the differences due to the hour of the day, the month of the year, the type of sensor/platform used (CTD, XBT, drifter, etc) and the spatial distribution are made using a combination of error measures, diagrams and statistical hypothesis testing. In addition to quantify the errors between different platforms, several assumptions often made when creating gridded analyses will be critically reviewed: unbiased data sets, non-correlated errors of the observations, spatially uniform variance, and Gaussian-distributed data.