

WP10 – North Sea products

SeaDataNet II Final meeting



General characteristics V2 data set

The North Sea aggregated data set V2 contains 1 610 854 stations.



Location of stations in the TS data collections for the North Sea: (a) V1.1 freely accessible data, 751 844 stations, (b) V1.1 restricted dataset, 830 513 stations and (c) V2, 1 610 854 stations.

Most if not all of the data previously of restricted use (V1.1) have in the meanwhile been made public. Some new records have been added and the geographical domain extended to the East (Skagerrak).



General characteristics V2 data set

The geographical coverage of stations is strongly impacted by the two intense measurement programme that took place along the UK coast and at a few stations in the central North Sea in 1988–1990 and 1992–1995.



Density map of the TS data for the North Sea. (a) full data set, (b) excluding the period 1988–1995. sdn-userdesk@seadatanet.org – www.seadatanet.org

General characteristics V2 data set





Characteristics and quality of the dataset

The dataset contains 7 344 660 TS-pairs of which 7 256 335 (98.8%) are QC-flagged "1" (good) or "2" (probably good). After quality control, this figure decreases to 7 051 911 (96.0 %).



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Characteristics and quality of the dataset

Data features were examined globally but also more specifically in four regions with their own characteristics

- I. the shallow areas: Southern Bight and German Bight,
- II. the Skagerrak
- III. the Norwegian coastal region (fjords), and
- IV. the area of greater depth around the Shetlands and Orkney.



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Main findings of the quality control

- Collating centres (15) apply QC routines, that can lead to systematic errors in quality control.
- Data collected when the measuring device was obviously not stabilized are erroneously flagged as "good" (because they pass the range check?). This occurs mainly in shallow waters but not only. We recommend the upper layers not to be published without specific quality control.
- Time series and track data are sometimes published as profiles and had to be rejected (sample position and/or time lacking).



Main findings of the quality control

- Oddities are sometimes difficult to identify and to handle, e.g. isolated good data flagged "0" ("not QCed") amongst data flagged "1" ("Good").
- Downcast and upcast both reported.
- Pressure reported as depth.
- QF set to "0" ("not QCed") for obviously interpolated values (should be "8")

QC statistics

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| | TOTAL | QF0 | QF1 | QF2 | QF≥3 |
|-------------|------------|-----------------------------|---------------------------------|--------------------------------|----------------------------|
| T before QC | 16 010 756 | 286 506 (1.79 %) | 14 907 428 (93.11 %) | 23 818 (0.15%) | 793 004 (4.95 %) |
| T after QC | Id. | 1 231 (0.01%) | 14 663 582 (91.59 %) | 27 499 (0.17%) | 1 318 444 (8.23%) |
| S before QC | 7 352 183 | 19 128 (0.26 %) | 7 238 129 (98.45 %) | 36 269 (0.49%) | 58 657 (0.80%) |
| S after QC | Id. | 15 440 (0.21%) | 7 034 736 (95.68 %) | 39 060 <mark>(0.53%)</mark> | 262 947 (3.58%) |

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Conclusions

- The quality of the North historical dataset is rather good. Adequate handling of track data by some collating centre would add some more valuable data.
- The spatial and time distribution of the data (cf. 1988–1995 period) present peculiarities that should be kept in mind when using the datasets.

Climatologies (V1.1)

- Work in progress
- Bathymetry based on GEBCO "One minute grid" (2008), $\Delta \phi = \Delta \lambda = 0.05^{\circ}$,
- 14 z-levels

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• DIVA still needs fine tuning





SST, summer (3months + season)



S at z=100m (4 seasons)



Validation, vs. WOD2013

SST SDNv1 left WOD2013 right summer & fall





Thank you!