SeaDataNet

PAN-EUROPEAN INFRASTRUCTURE
FOR OCEAN & MARINE DATA
MANAGEMENT

Black Sea Products
Sep 2015

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Black Sea V2 Historical TS Data Collection

sdn-userdesk@seadatanet.org – www.seadatanet.org

General Statistics (*V1*/*V2*)

Initial collection

- Cruises: 2353/**2263** (-4%)
- Stations: 125565/**122726** (-2%)
- Samples: 3815118/**3036865** (-20%)
- Period: 1868-2014

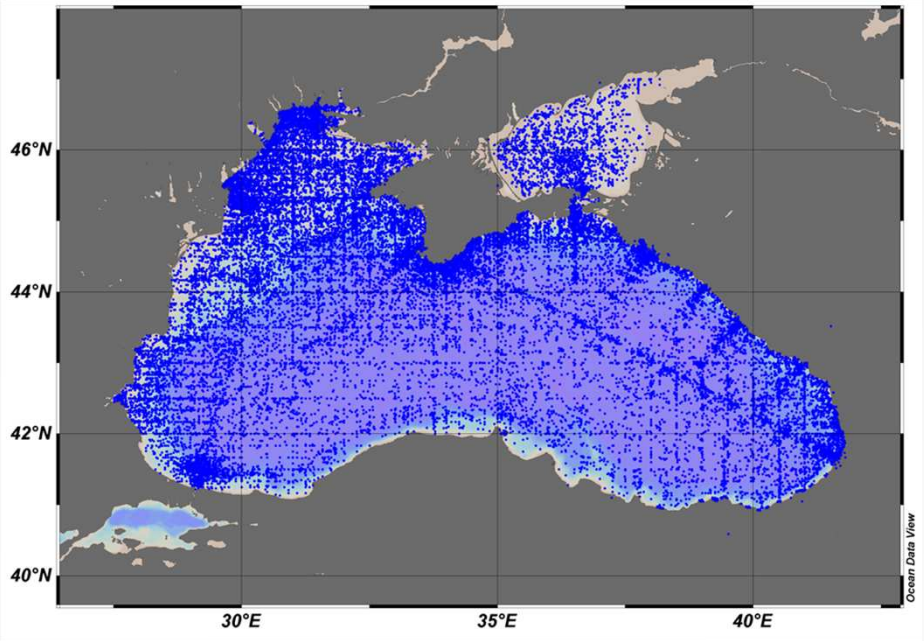
Upon excluding duplicates and EDMO 688 data

- Cruises: 2069/**1723** (-16%)
- Stations: 101369/**96487** (-5%)
- Samples: 3412707/**2696215** (-21%)

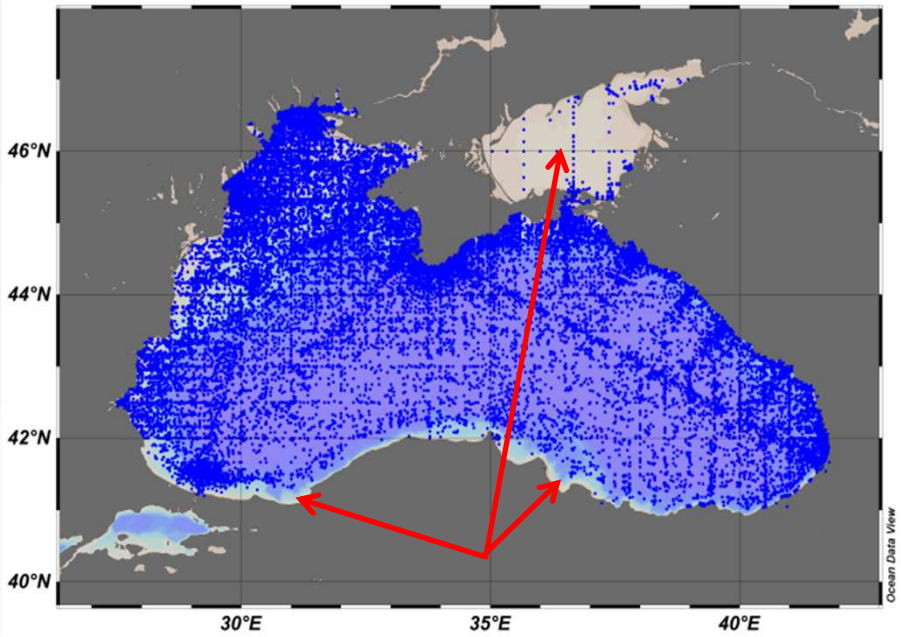
Restricted stations at CDI site: 6060 (possible +6%)

Spatial data distribution

V1



V2



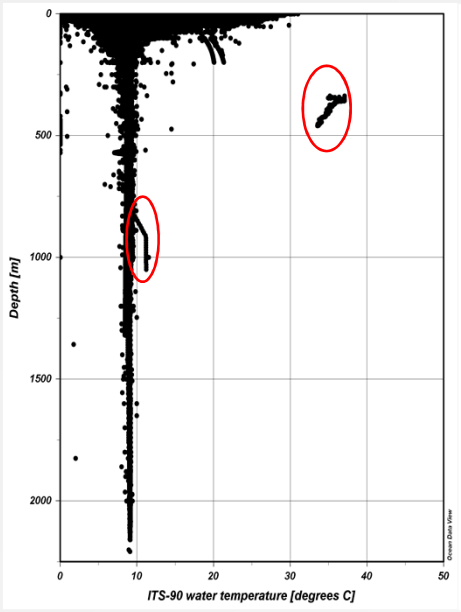
Initial QF Statistics

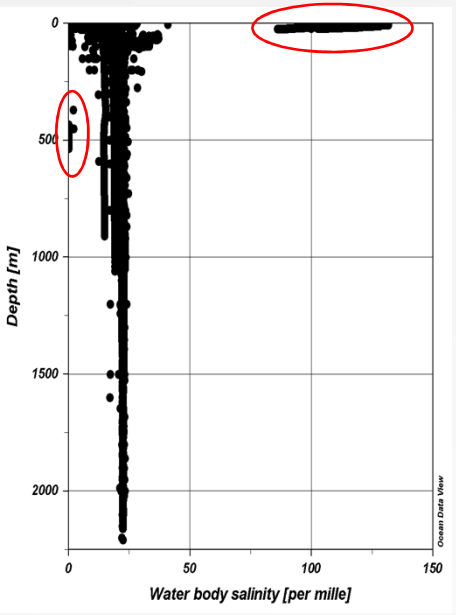
QF	0	1	2	3	4	Total
	not checked	good	probably good	probably bad	bad	
Depth	586952	2349163	1368	99377		3036860
	19.33%	77.35%	0.05%	3.27%		100.00%
Temperature	582370	2264869	2	73972	3866	2925079
	19.91%	77.43%	0.00%	2.53%	0.13%	100.00%
Salinity	575947	2222589	3650	46522	2980	2851689
	20.20%	77.94%	0.13%	1.63%	0.10%	100.00%

- Non QC-ed data V2/V1: **470933 (17% of total)/** 377065 (+25%)

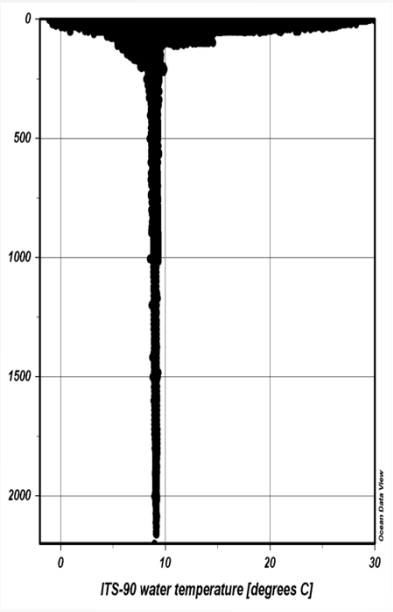
Data to correct

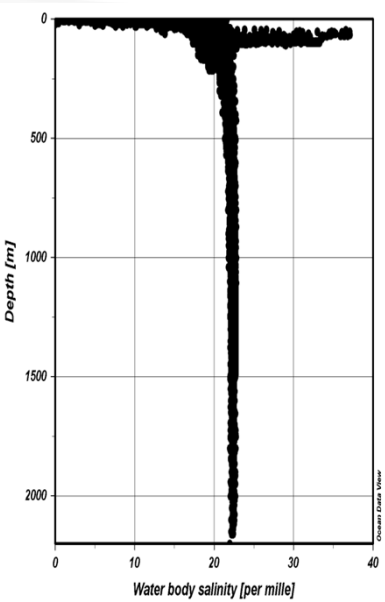
Outliers flagged as “good”





Upon applying QC





QC assessment results

- Duplicates: **13,774**
- Stations on land: **2461**
- Stations without data: **102**

Range checks:

- Depth < 0: found at **29** stations
- Temperature < 2 and QF<>4: **65**
- Salinity < 0 and QF<>4: **128**.
- Salinity S > 39 and QF<>4: **7**
- Salinity > 23 out of Bosporus area : **55**
- Temperature < 6 at depth > 200: **110**
- Temperature > 10 at depth > 200: **10**

Final QF Statistics

QF	0	1	2	3	4	Total
	not checked	good	probably good	probably bad	bad	
Depth	0	2602832	58396	34852	135	2696215
	0.00%	96.5%	2.2%	1.3%	0.0%	100.0%
Temperature	0	2569113	43207	76568	5126	2694014
	0.00%	95.4%	1.6%	2.8%	0.2%	100.0%
Salinity	0	2528715	37416	57186	5426	2628743
	0.00%	96.2%	1.4%	2.2%	0.2%	100.0%

Conclusions

- Amount of data decreased in V2 compared to V1 approximately on 21%
- The initial dataset still contained significant amount non-QC-ed data (~20%)
- In the final QC-ed V2 dataset ~96% have good quality
- Information about found problems with data and suggested quality flagging was brought to attention of data providers at the beginning of August 2015
- Information about duplicates submitted by different providers (total 13,774 stations) was brought to attention of CDI Support Team for further actions
- Contribution to deliverable D10.4 provided
- Description to SEXTANT catalogue submitted

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Black Sea Climatology

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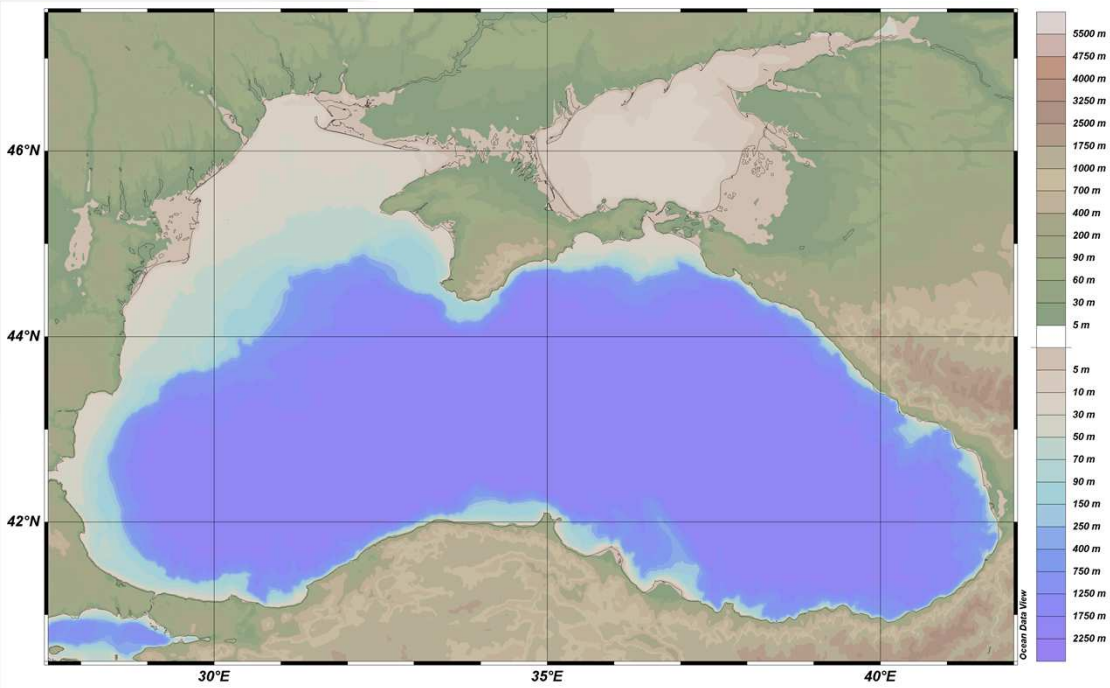
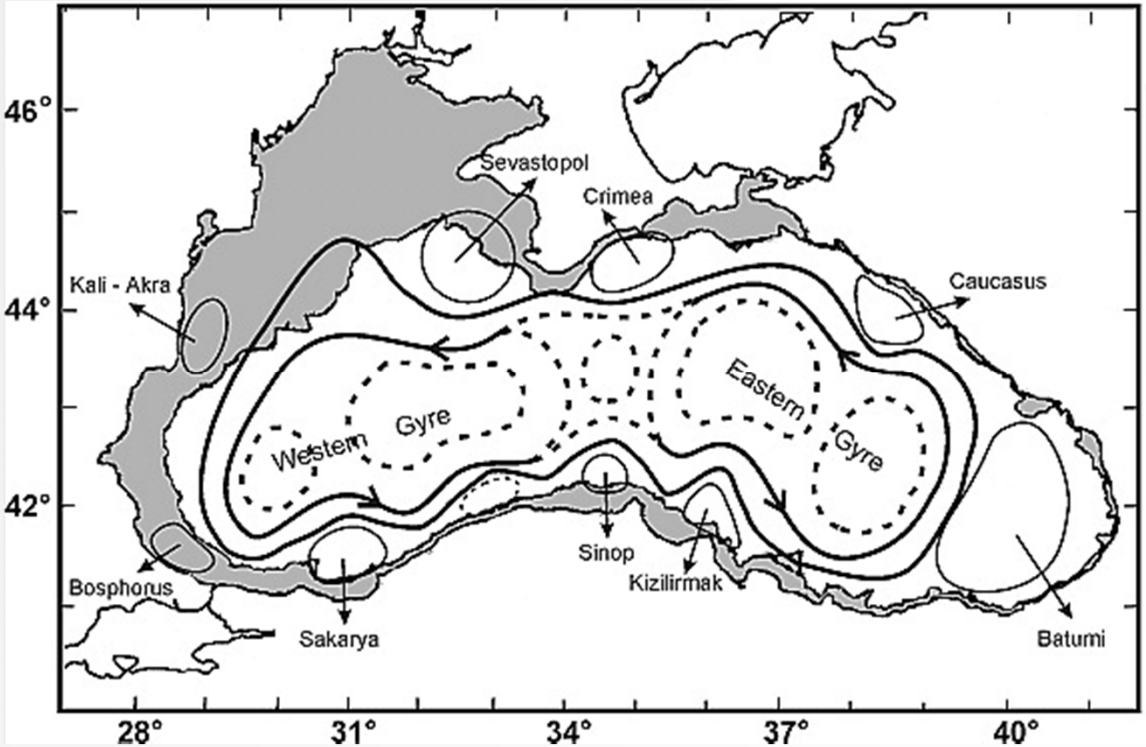
Domain definition

- Domain coordinates: 40.5N-47.5N, 27.5E042E
- Maximum depth 2200



Domain definition: Black Sea upper layer circulation



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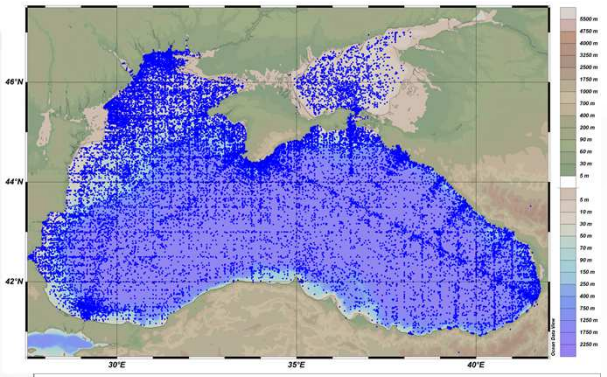
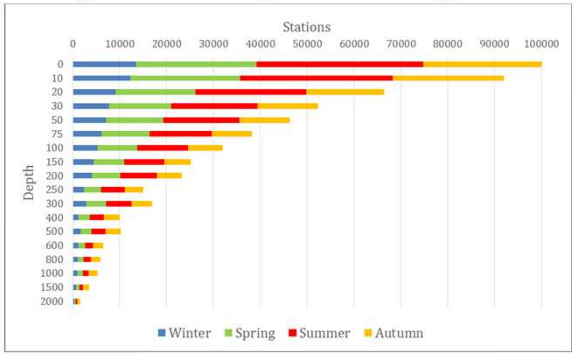
http://onlinelibrary.wiley.com/doi/10.1029/2002JC001508/full#jgrc9137-fig-0001

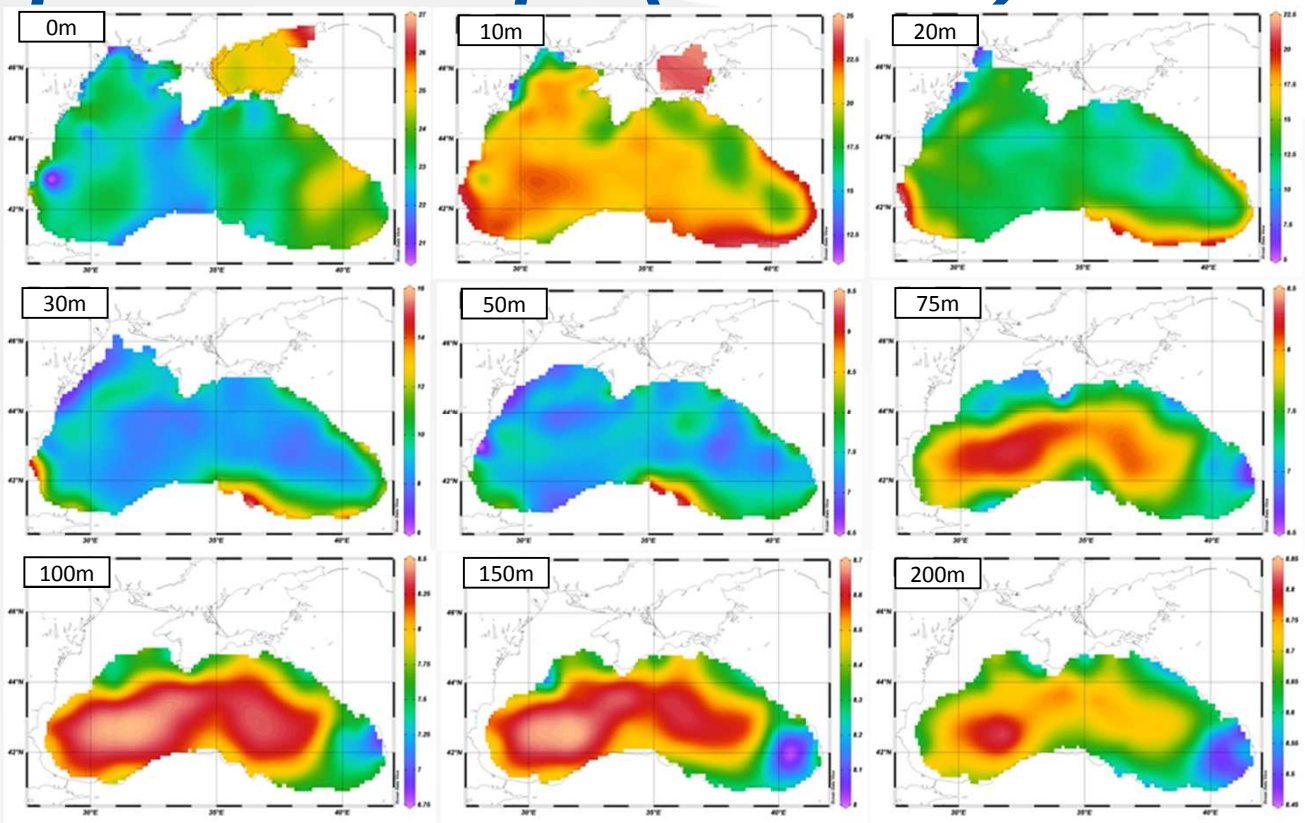
Time-space resolution

- Data availability (V1 dataset) :~104,400 stations, for period: 1900-2013
- Seasonal maps: 0, 10, 20, 30, 50, 75, 100, 150, 200, 250m
- Annual maps: 300,400, 500, 600, 800, 1000, 1200, 1500, 2000 m
- Horizontal resolution: 0.1°

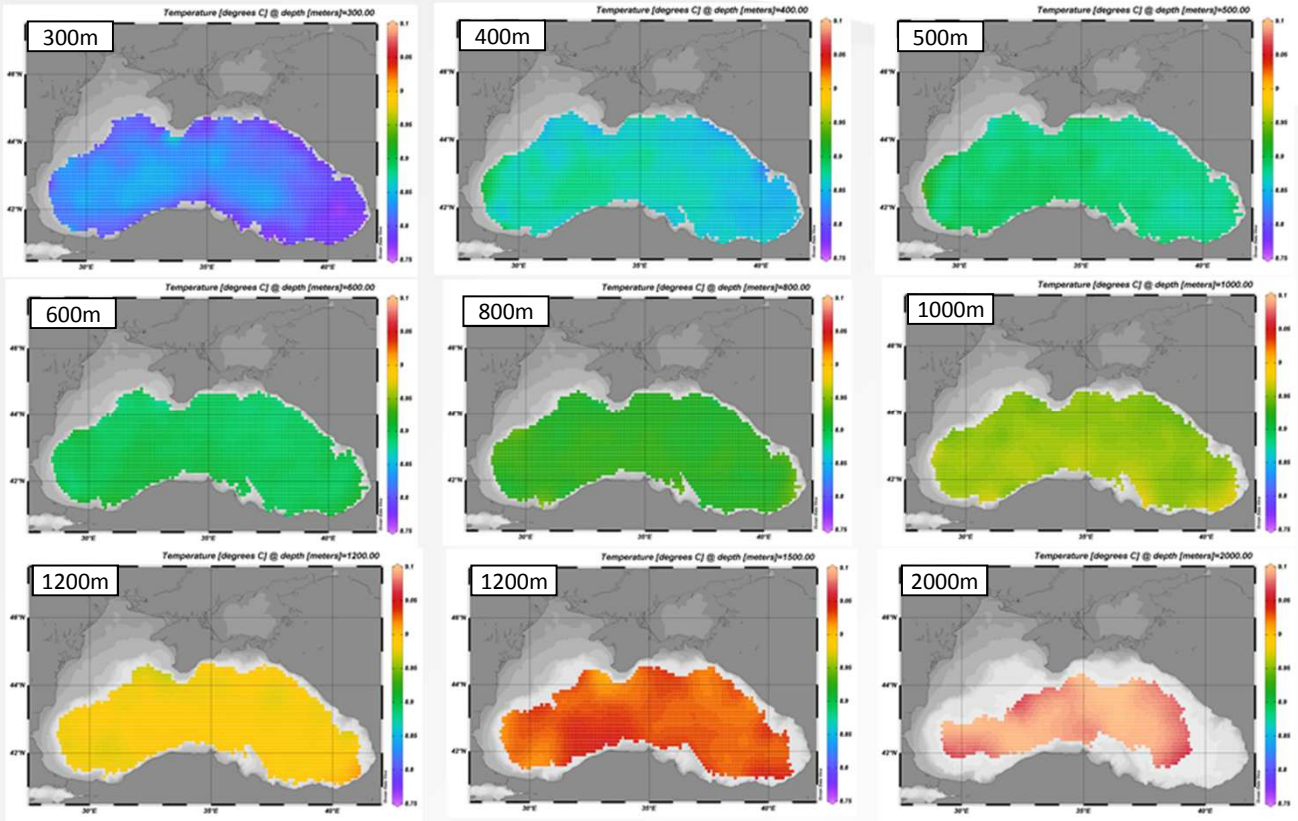




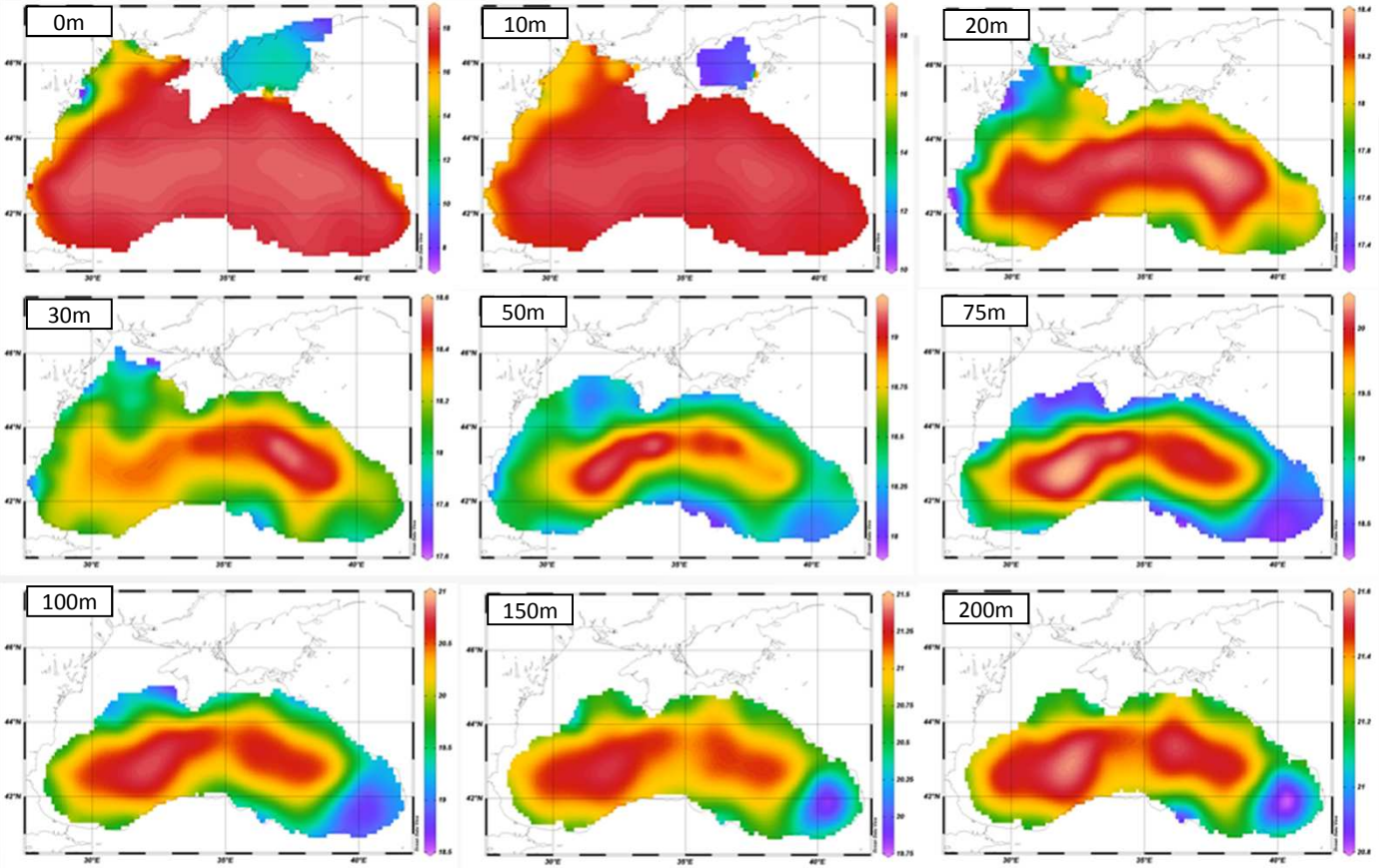
Temperature Maps (summer)



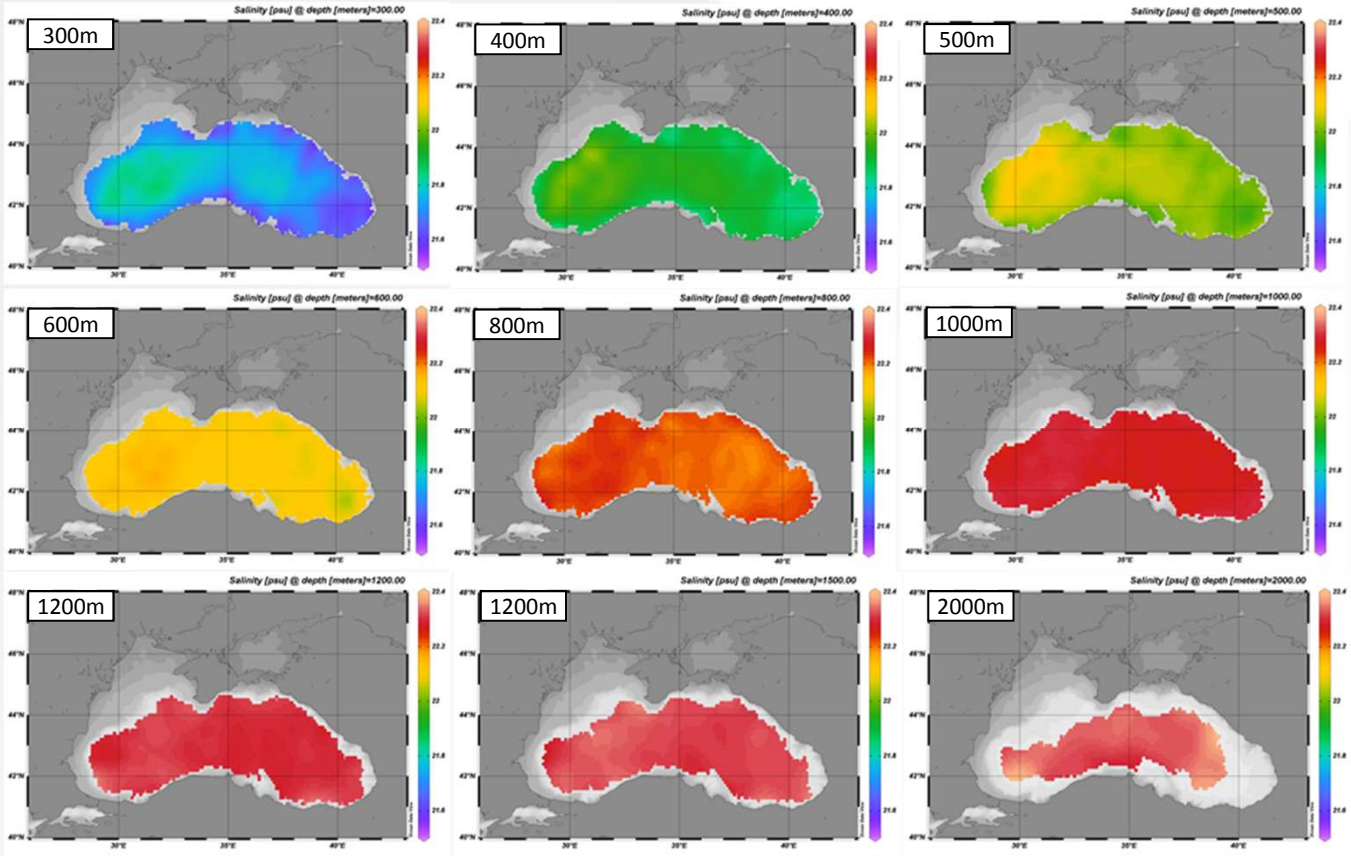
Temperature Maps (annual)



Salinity Maps (summer)



Salinity Maps (annual)



Conclusions

- The main advantage of the current product is better resolution and better representativeness of underlying data compared to most of pre-existing products
- The main Black Sea features (e.g. Rim Current, Cold Intermediate Layer) are well recognized in the Temperature and Salinity climatic fields
- To do list:
  - Further improvement of the quality of upper layer fields (tuning DIVA parameters) is still needed (work is ongoing).
  - Validation of final version against WOA13v2 and SeaDataNet 1 Climatology
  - NetCDF file → to IFREMER ftp; Description → to SEXTANT

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