

QuinCe



Developing an online tool for data reduction and quality control of surface ocean fCO₂ data

Motivation

- A single, centralised tool ensures data from all sources is treated with the same community-approved algorithms
- Removes code development responsibilities from scientists
- Open Source code increases traceability and transparency
- Reduces data handling work required by scientists
- Flexible architecture will allow shorter development time for new projects using different types of data

	0/1	Intake Tempera	Salinity	Salinity				Equilibrator Temperature 0					
quilibrator Pressure (absolute)	0	Equilibrator Pre	Atmosp	Atmospheric Pressure 0				xH ₂ O 0					
:O ₂	0	Other Tempera	Other P	Other Pressure 0			Air Flow 0						
Vater Flow		0											
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- Date/Time			Column 1	Column 2	Column 3	Column 4	Column 5	Column 6		Column 8 Column 9	Column 10	Colur	
No columns assigned		1	57.14566	8.42750	0.00000	21.530579	5.6550	5.4621	Date/Time +	3.8578	0.696		
No columna assigned			2	57.14566	8.42666	0.00278	21.530694	5.6713	5.4946	Longitude	3.8578	0.69€	
			3	57.14550	8.42566	0.00556	21.530810	5.6929	5.4994	Latitude	3.8578	0.696	
- Position	4	\$7.14550	8.42482	0.00833	21.530926	5.7067	5.5232	Run Type	3.8505	0.694			
Longitude	5	57.14550	8.42382	0.01111	21.531042	5.7265	5.5394	Intake Temperature	3.8432	0.691			
Column: Column 3 X	6	57.14550	8.42300	0.01389	21.531157		5.5475	Salinity	3.8505	0.694			
Column: Column 3 × Format: 0° to 300° Latitude Column: Column 2 × Format: -90° to 90°			7	57.14550	8.42200	0.01667	21.531273		5.5674	Equilibrator Temperature Equilibrator Pressure (absolute) Equilibrator Pressure	3.8358	0.692	
			8	57.14550	8.42116	0.01944	21.531389		5.5845		3.8358	0.692	
			9	57.14550	8.42016	0.02222	21.531505	5.7902	5.5896		3.8285	0.691	
			10	57.14550	8.41932	0.02500	21.531620	5.8040	5.5920		3.8358	0.692	
			11	\$7.14550	8.41832	0.02778	21.531736		5.5908		3.8285	0.691	
Primary Position File			12	\$7.14550	8.41750	0.03056	21.531852		5.6078	(differential)	3.8212	0.689	
Primary position file? NO			13	57.14550	8.41650	0.03333	21.531968	5.8393	5.6163	Atmospheric Pressure	3.8285	0.691	
	14	57.14550	8.41566	0.03611	21.532083		5.6146	xHzO	3.8285	0.691			
Set As Primary Position File	15	57.14550	8.41466	0.03889	21.532199		5.6276	CO,	3.8285	0.691			
	_		16	\$7.14550	8.41382	0.04167	21.532315	5.8608	5.6295	Other Temperature	3.8212	0.689	

Features

- Users can upload data in any text format no pre-processing required
- Individual sensor calibration adjustments can be applied
- Data reduction is performed automatically, with calibration to gas standards
- Automated QC routines detect common issues (GPS errors, range limits, outlier and spike detection...) and highlight them for further investigation
- Extensive plotting and mapping tools for manual 1st Level QC
- Automatic submission to data centres (e.g. CMEMS TAC), synthesis projects (e.g. SOCAT) & ICOS RI

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22:00 09 Aug	02:00	04:00 Date	06:00 08 Fime	:00 10	:00 12:00			Sar os	e Barrang	a 7	MaracalD	Caracas S
Date/Time	Longitude	Latitude	Intake Temp	Salinity	Equil. Temp: PT100 Top	Equil. Temp: PT2000 Bottom	Equil. Temp: Mean	Equil. Pressure	xH ₂ O (True)	fCO, Final	QC Flag	WOCE Flag
2015-08-09 11:30:41	-67.035	24.408	29.800	36.792	29.888	29.930	29.909	1014.126	38.497	415.959	Good	Assumed Good
2015-08-09 11:31:27	-67.033	24.409	29.840	36.800	29.898	29.930	29.914	1011.762	38.455	414.234	Good	Assumed Good
2015-08-09 11:32:13	-67.032	24.411	29.840	36.797	29.903	29.930	29.916	1011.593	38.492	414.777	Good	Assumed Good
2015-08-09 11:32:59	-67.030	24.413	34.600	36.790	29.903	29.930	29.916	1013.128	38.483	508.630	Bad	Bad
2015-08-09 11:33:44	-67.028	24.414	29.840	36.795	29.906	29.930	29.918	1017.702	38.460	420.088	Good	Assumed Good
2015-08-09 11:34:29	-67.026	24.416	29.840	36.804	29.920	29.930	29.925	1016.131	38.463	418.886	Good	Assumed Good
2015-08-09 11:35:14	-67.024	24.418	14.800	36.806	29.929	29.930	29.929	1011.694	38.435	219.584	Bad	Bad
2015-08-09 11:36:00	-67.022	24.420	14.800	36.808	29.923	29.980	29.951	1011.136	38.410	219.000	Bad	Bad
2015-08-09 11:36:45	-67.020	24.421	29.840	36.808	29.912	29.980	29.946	1017.238	38.384	419.148	Good	Assumed Good
2015-08-09 11:37:31	-67.018	24.423	32.300	36.805	29.901	29.930	29.915	1015.246	38.388	464.034	Bad	Questionable
2015-08-09 11:38:16	-67.016	24.425	29.800	36.808	29.891	29.930	29.911	1016.987	38.396	419.269	Good	Assumed Good
2015-08-09 11:39:02	-67.015	24.426	29.800	36.810	29.892	29.930	29.911	1011.205	38.389	414.402	Good	Assumed Good
2015-08-09 11:39:47	-67.013	24.428	29.840	36.813	29.903	29.930	29.916	1018.147	38.332	420.646	Good	Assumed Good
2015-08-09 11:40:33	-67.011	24.430	29.840	36.818	29.912	29.930	29.921	1017.759	38.329	420.062	Good	Assumed Good

Future Development

- Complete metadata integration metadata and data will be treated as a single entity throughout
- More intelligent QC routines based on comparisons with historic observational data

