



Glider Mission Summary Report

CNR-ISMAR SMART2
SOCIB GLIDING NOV2017 (GF-MR-0064)



Balearic Islands
Coastal Observing
and Forecasting
System



Mission Name		20171003_GF-MR-0064_SOCIB-EXT-CNR-TERESA2017	
Platform Model		Slocum 1000m G2	
Platform ID / Name / WMO Code		U518 / teresa / unknown	
Related Platforms / Missions		<ul style="list-style-type: none">SCB-ARVORI003	
Start Date		2017-11-02 13:48:22 UTC	
End Date		2017-11-17 06:52:34 UTC	
Total Days	14.7	Total distance (Km / Nm)	435 / 234
Battery Consumption (Ah)		64 (reading from 5 to 69)	
Battery Type		Eltec (310 Ah-nominal capacity) (New)	
Survey Area		Sardegna – Menorca channel [Western Mediterranean Sea]	
Objective(s)	The Mediterranean Sea (MS) has been identified as hot sopto for climatic change, i.e., a region most impacted by ongoing warming trend and increase in extreme events. The MS provides a laboratory-type environment for documenting changes within it and for understanding the role of key processes involved making inferences on processes occurring also at the global scale.		

SCI Profiles	Sensor Type:	CTD seabird	OPTODE Aanderaa	MicroRider
	Serial number:	9239	0360	1206
	Calibration date:	23/sep/2014	20/may/2014	13/aug/2012
	Casts:	210	210	Unknown
	Half-Yos:	210	210	210
	Samples:	358290	118936	Unknown
	Sampled distance [km]:	153	153	Unknown
	Intersample time [s]:	3.294	9.925	Unknown
	Sampling Frequency [Hz]	1/2	1/8	0 (as fast as possible)
	Depth range this configuration applies (m)	[-5, 2000]	[-5, 2000]	[-5, 2000]
	Sampling during Diving	Y	Y	N
	Sampling during Overing	N	N	N
	Sampling during Climbing	Y	Y	Y
	Sampling during Surface	N	N	N
	(calibration sheets available upon request to glidertech@socib.es)			

Mission Preparation	Preparation was performed in SOCIB in collaboration with CNR		
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Mission Survey	Navigation	It was very satisfactory. The glider responded well to the commanded target waypoints.
	Underwater Maneuvering	Two main configurations were applied during the deployment: deep flying mode during the operative part of the mission in other to reduce consumption; and adaptive flying mode in the rest of the mission in order to avoid collisions with seabed.

	Engineering	<table><tr><td>Sensor</td><td>Errors</td><td>Warmings</td><td>Oddities</td></tr><tr><td>Digifin</td><td>0</td><td>12</td><td>300</td></tr><tr><td>Iridium</td><td>1</td><td>0</td><td>102</td></tr><tr><td>GPS</td><td>0</td><td>4</td><td>0</td></tr><tr><td>Science_super</td><td>0</td><td>3</td><td>3</td></tr><tr><td>attitude_rev</td><td>0</td><td>1</td><td>0</td></tr><tr><td>ocean_pressure</td><td>0</td><td>0</td><td>1</td></tr><tr><td>pitch_motor</td><td>1</td><td>0</td><td>2</td></tr></table>	Sensor	Errors	Warmings	Oddities	Digifin	0	12	300	Iridium	1	0	102	GPS	0	4	0	Science_super	0	3	3	attitude_rev	0	1	0	ocean_pressure	0	0	1	pitch_motor	1	0	2
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pitch_motor	1	0	2																															
Communication Systems	Were reliable and fluent																																	
Contextual/Awareness Sensors	Pressure transducer, internal vacuum and internal temperature seemed to have worked correctly. Compass also reported coherent values. Altimeter detected the bottom correctly.																																	
Hull/Hydrodynamics	No signs of problems																																	
Mission Runs	1																																	

Glider Behavior	Date:	03/11/2017	04/11/2017	16/11/2017	16/11/2017	17/11/2017
	Event	Deep fly mode	Pitch correction	UTC on	Infinite yoying	Recovery
	Underwater Top Inflection Depth (m):	10				
	Underwater Bottom Inflection Depth (m)	950				
	Minimum Distance to Sea-floor to be kept (m)	Off				
	Pitch angle [deg]	±18	±22		±18	
	Pithc mode	Servo				
	Surface upon completion of this # of dives	4			∞	
	Surface if this amount of hours without stable communications (hrs)	12				
	Surface at this particular UTC times	never		4, 7, 22		
	Surface if a waypoint is hit within that distance (km)	150				
	Altimeter	off			off	

Administration / Notification	Although multiple administrative and notification procedures took place during the different stages described above, these have not been reported because are considered out of the scope of this report. Same applies for multimedia and public-diffusion (special and more intense actions taken in that aspect. Contact gliderteh@socib.es and outreach@socib.es for specific information); and also for accounting.
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HHRR	The novelties and exigencies of this mission required of an extraordinary team coordination (with more people involved and number of intra-communications). Nevertheless, coordination amongst multiple participants (glider-techs, field-techs, scientists & outreachers) was fluent and efficient. There were no personal damages and the availability of each member, for all the tasks assigned at each moment, was correct (including on-alert shifts for field intervention and 24/7 glider monitoring during survey -which was more intense than usual-). Interaction with external partners was also very fruitful.
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Compass Error Check

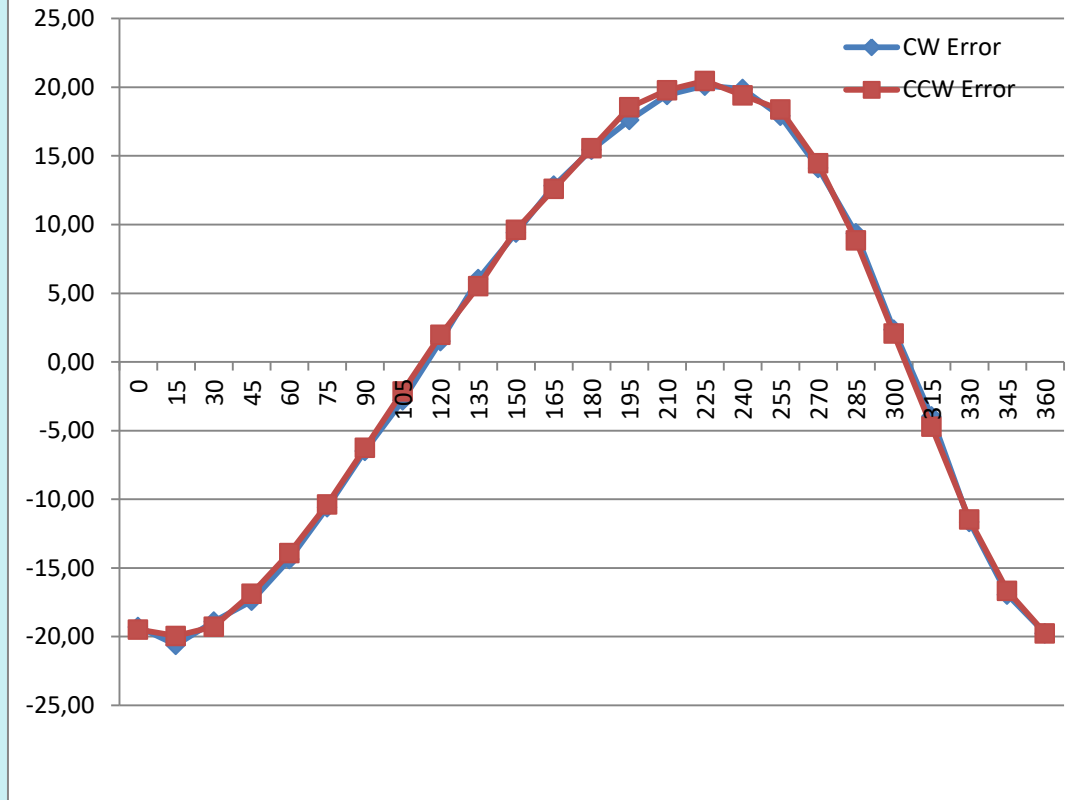

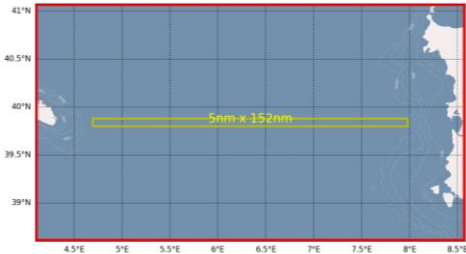


Figure 1 – Compass Error Measurement

See 20171010_TERESA_CEM_GF-MR-0064_SOCIB-EXT-CNR-TERESA2017.pdf for more info

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Institute	SOCIB in collaboration with IMEDEA ISMAR Istituto di Scienze Marine Arsenale - Tesa 104, Castello 2737/F, 30122 Venezia, Italy
Project Affiliation (web-site)	http://www.socib.eu http://www.ismar.cnr.it/
Partnership / Participation	<ul style="list-style-type: none"> • PARTHENOPE (CNR-ISMAR) • SOCIB (Accessed Infrastructure) • IMEDEA (in-kind contribution)
Glider Software Version	Nav : Unknown Acomms, Payload: Unknown
Data Retrieval (real-time [RT] / delayed-mode [DM])	<ul style="list-style-type: none"> • RT: sub-set via satellite link at each surface maneuver • DM: full/direct memory card backup after glider disassembly during Conclusion mission-phase
Data Available From	http://thredds.socib.es/thredds/catalog/auv/glider/teresa-cnr_teresa/catalog.html
Further Details	glidertech@socib.es
Global Overview	<div style="text-align: center;">  </div> <div style="text-align: center;">  </div> <p style="text-align: center;">Figure 2 - Map providing general overview of the Survey Area</p> <p>Online track:</p> <p>http://apps.socib.es/dapp/?deployments=489-3-0-000033,707-21-0-990033&layers=none&units=scientific</p>

Scientific Preliminary Review

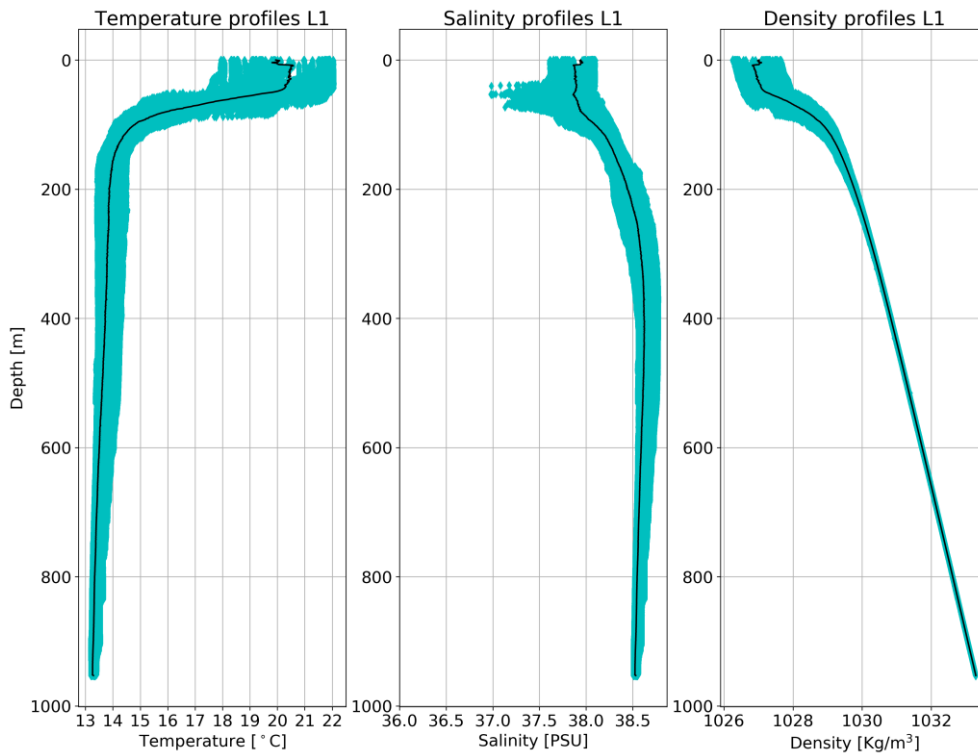


Figure 3 - CTD profiles

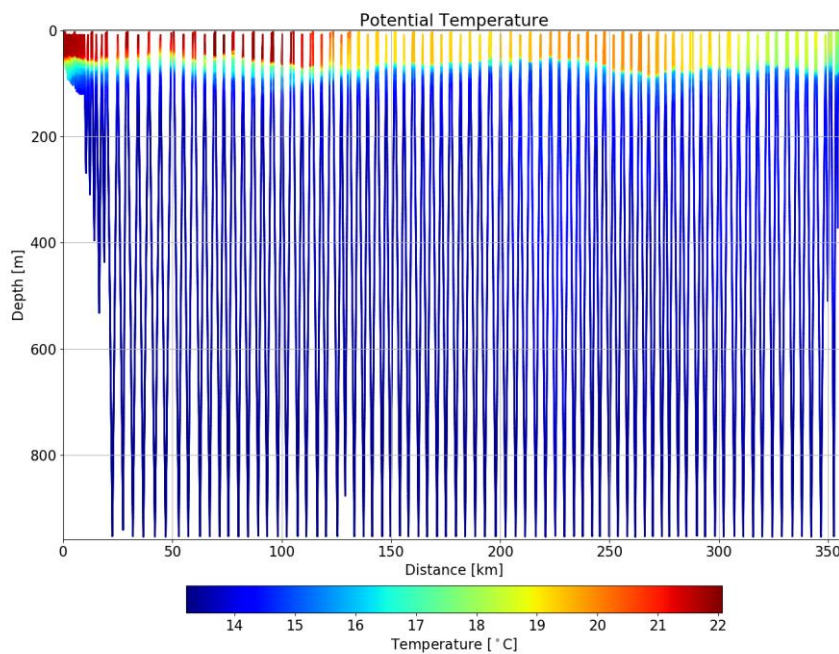


Figure 4 - Potential temperature (full depth range)

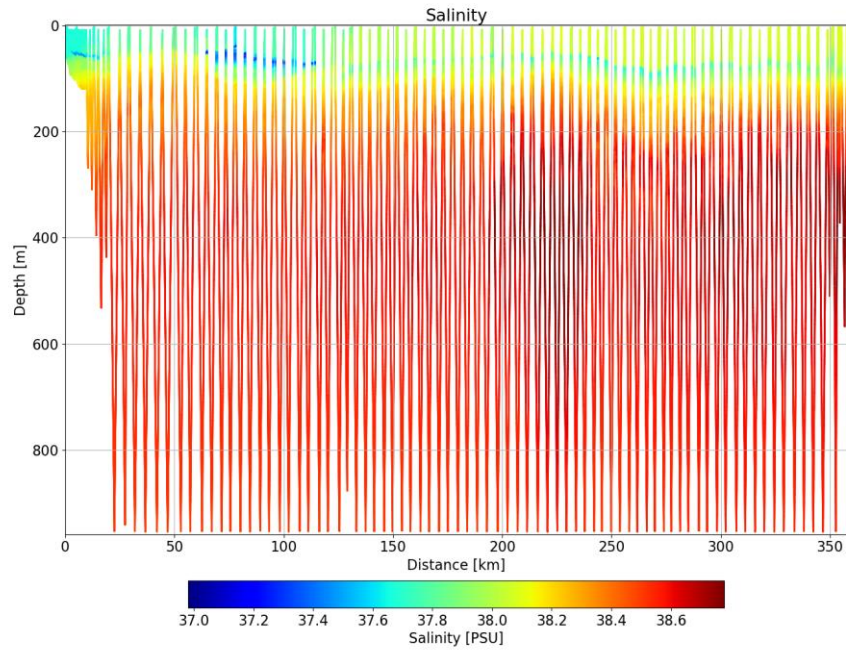


Figure 5 - Corrected salinity (full depth range)

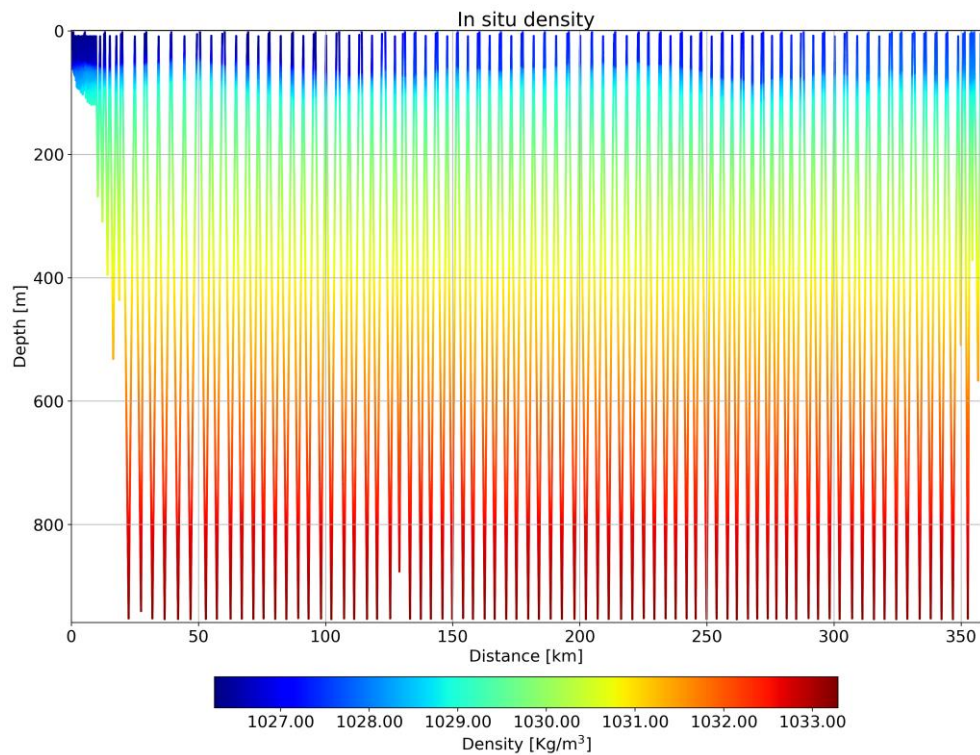


Figure 6 – In-situ Density derived from corrected salinity and temperature (full depth range)

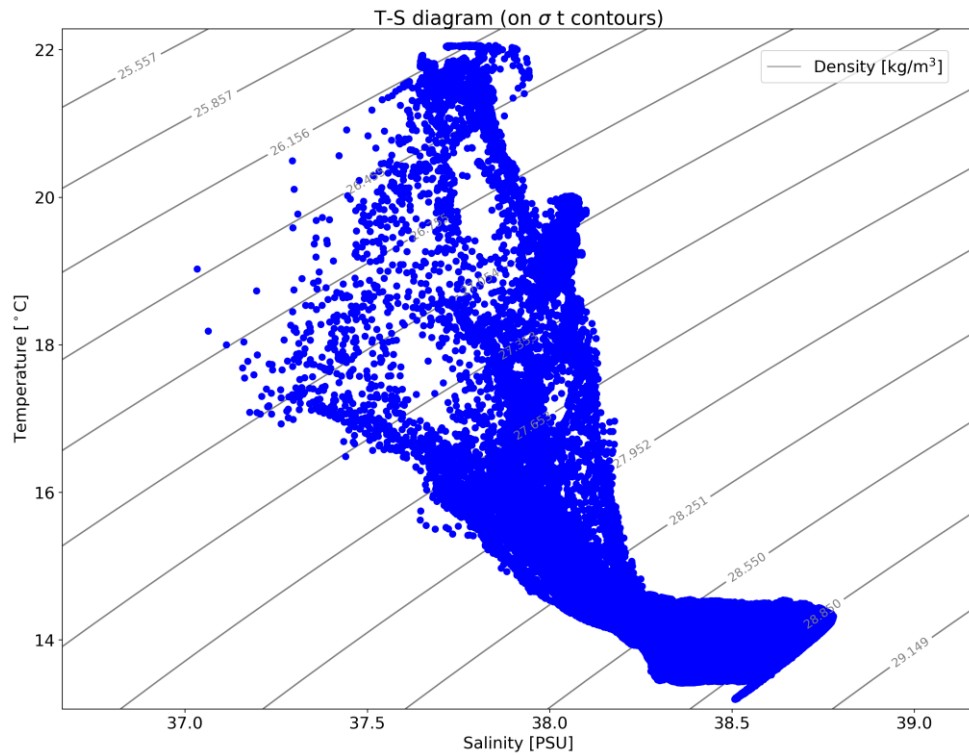


Figure 7 - T-S diagram (thermal-lag corrected)

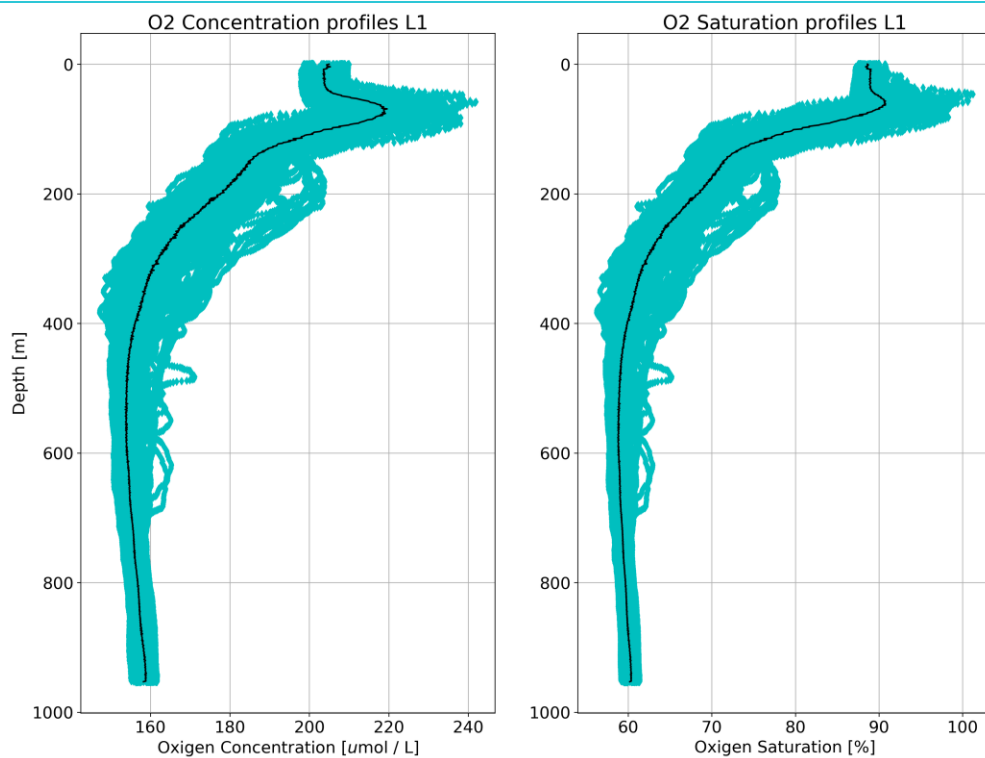


Figure 8 - In-situ oxygen profiles

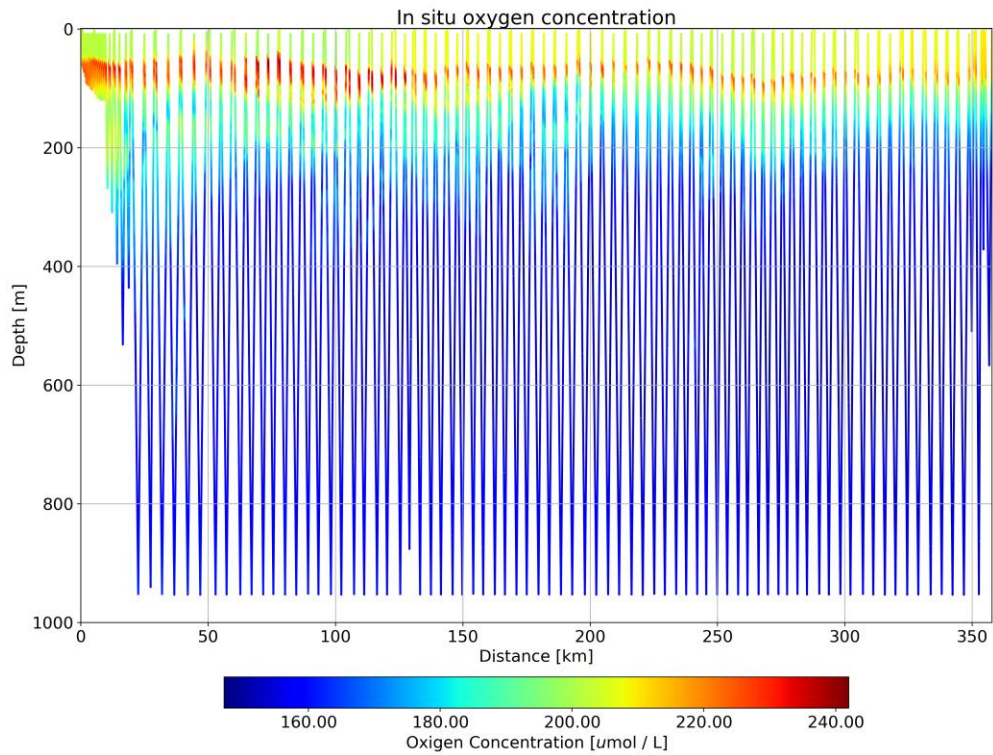


Figure 9 - In-situ oxygen concentration

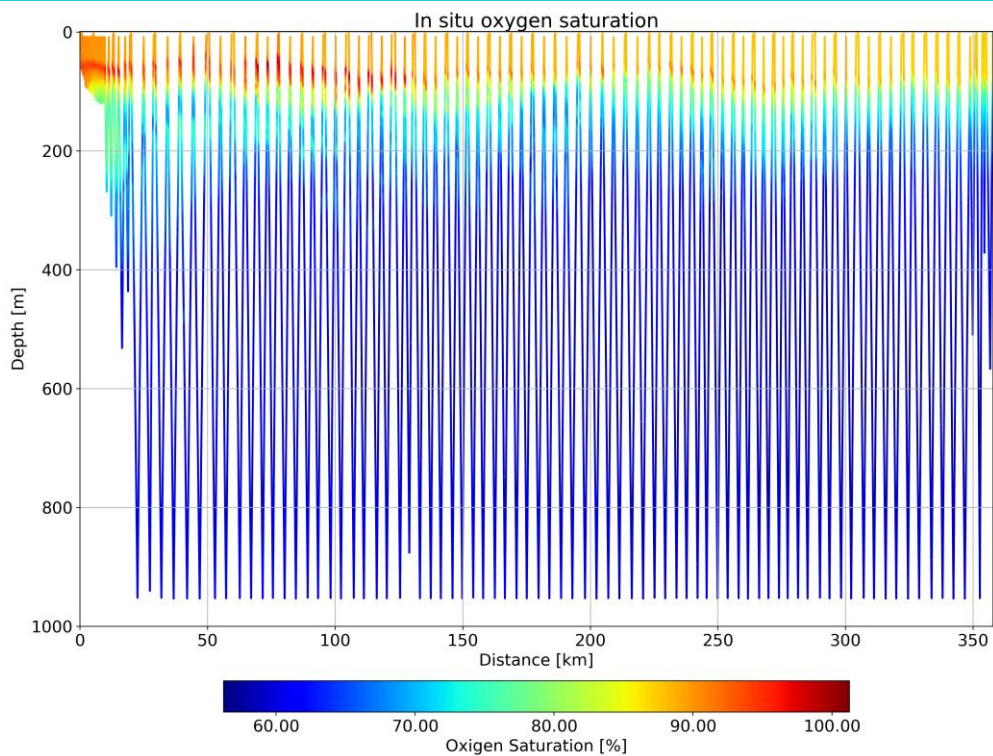


Figure 10 - In-situ oxygen saturation

