Argo Data visualization DO-A-THON

Monitoring Argo floats – Euro-Argo

ADMT20, October 2019

Monitoring Argo floats

https://fleetmonitoring.euro-argo.eu/

- **Use cases**

Dashboard – ALERTS

- Your floats (selection through indexes)
- Sort by Alert
  - **Missing Profile** (today > cycle_period + last Tx): your float is probably dead or not decoded
  - **Battery**: your float will probably die soon; consider recovery?

The dashboard displays information on float last cycle only

6901677	OIN-14-AR-32 140824	ARVOR	08/10/2019 07:27:00	154	6.9	29/07/2015
6902631	OIN-15D-ARL-11 152046	ARVOR	25/09/2019 12:13:00	141	6.9	15/11/2015
6901735	OIN-14-AR-74 144178	ARVOR	28/09/2019 20:31:00	165	6.9	31/03/2015

Dashboard – ALERTS

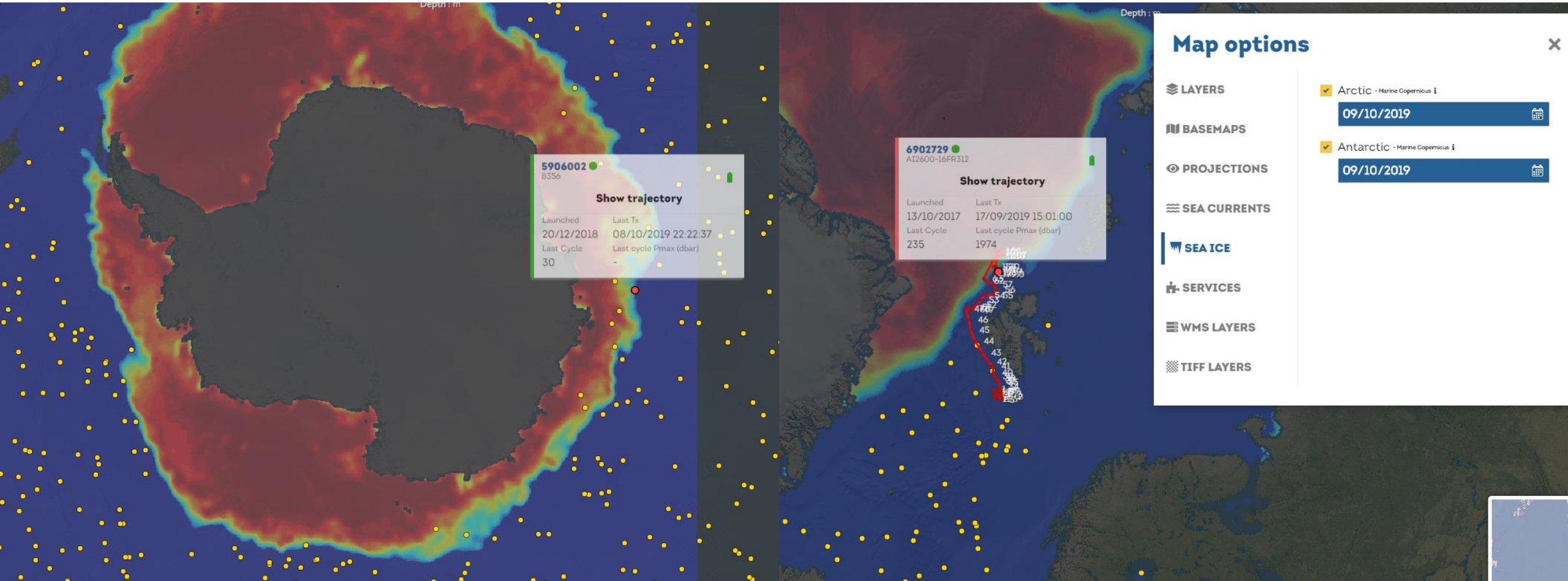
- **Surface** (EOL messages, grounded @ 0 dbar, tech messages but not profile data, saturation of valve actions during buoyancy reduction phase, etc.): check your float!
- **Grounding** (alert if not coherent with bathy; to be refined)
- **Profile max pressure**: your float did not reach its target profile pressure +/- tolerance

6902753	30/09/2019 23:55:00	77	9.2	2070
6902904	09/10/2019 09:24:00	83	9.7	1950
6900900	02/10/2019 06:13:00	170	9.5	1990

A	WMO	Last Tx	Last cycle	Battery	Last cycle Pmax (dbar)	Surface float	Last cycle grounded
	3901860	12:22:55		10.6			
	3901941	10/09/2019 02:03:00	382	10	0	10/09/2019 06:28:23	G
	6902811	30/09/2019 07:04:40	79	12.6	2967		G
	6901269	01/10/2019 05:54:00	48	9.5	1360		G

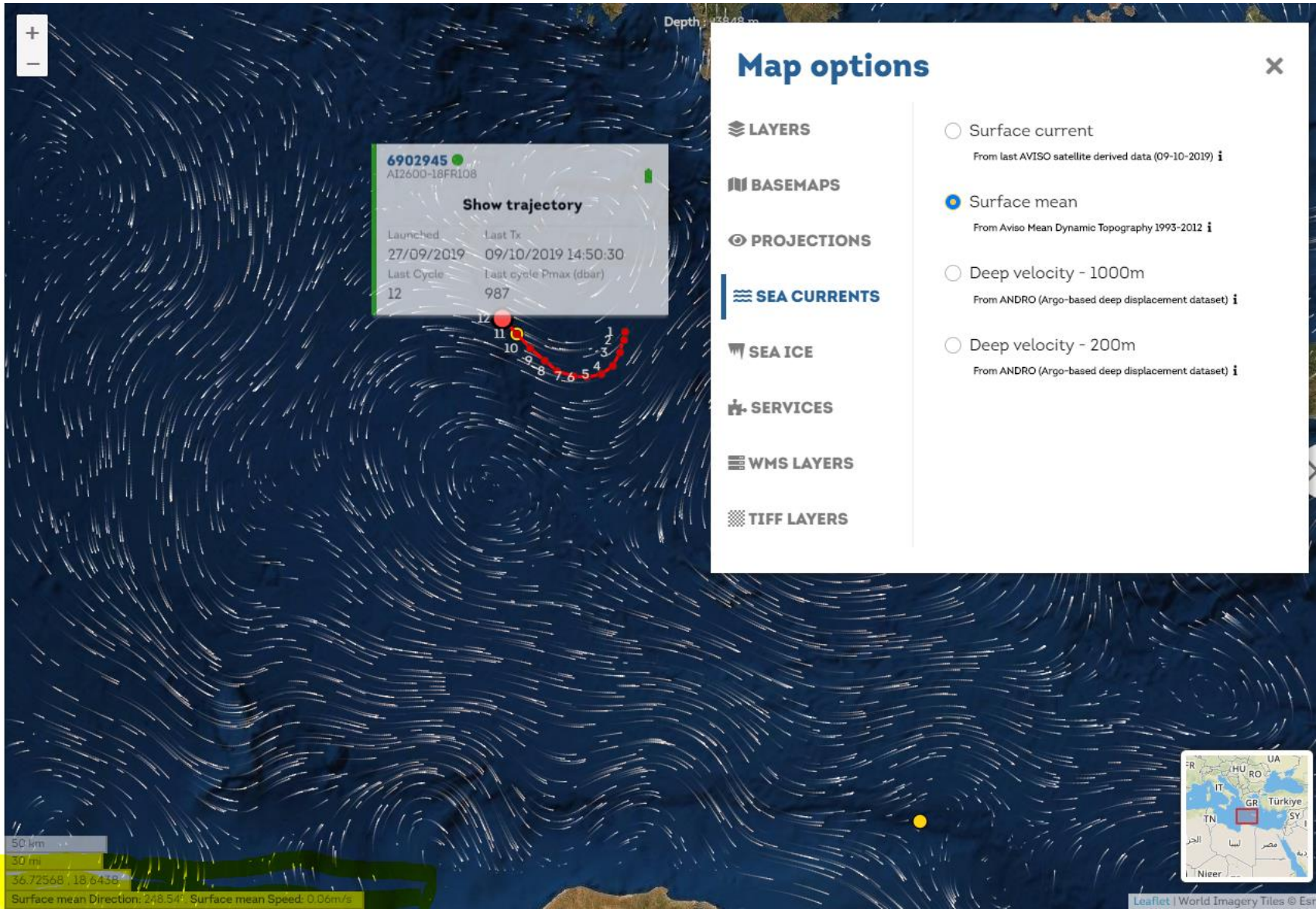
Dashboard – Map – ICE

- **Check float positions with last sea ice edge:**
  adjust float parameters (ISA, cycle period etc.) before the float is trapped under ice;
- Go back in time to check ice edges with float trajectory and profile dates



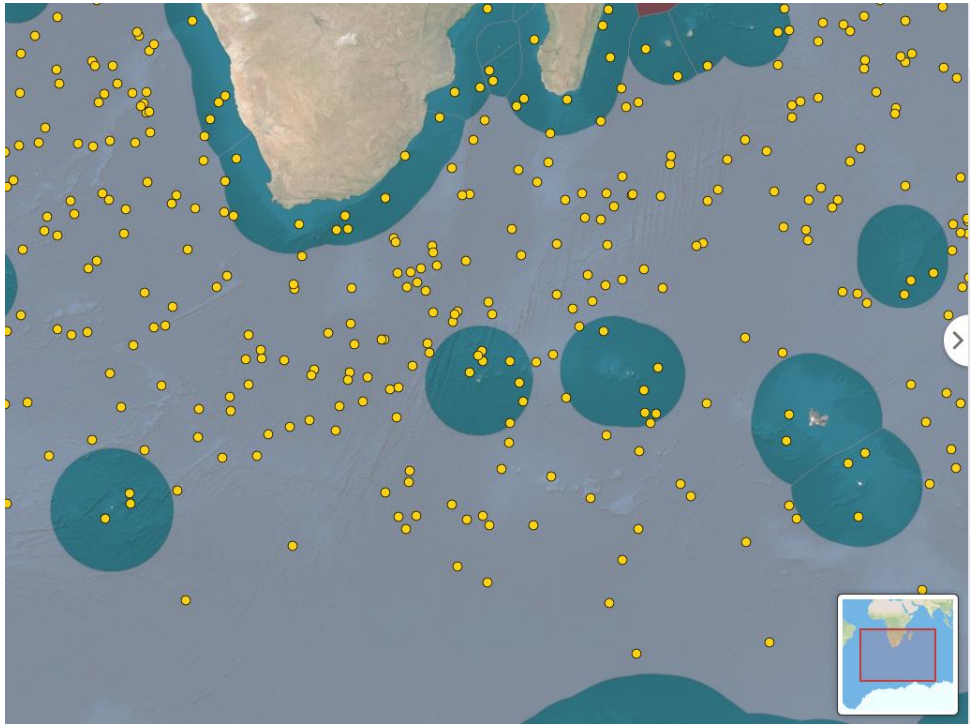
Dashboard – Map – CURRENTS

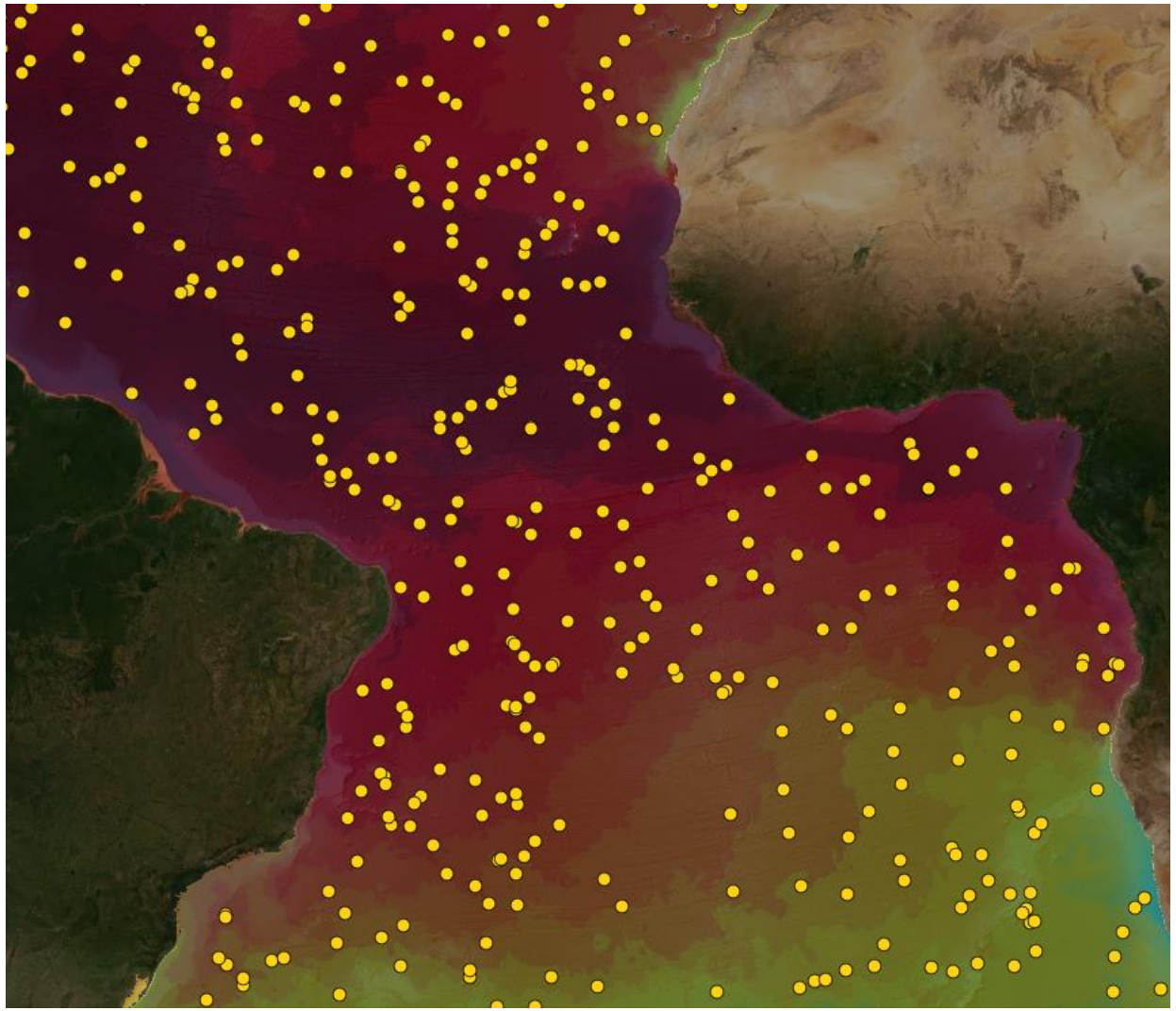
- Float trajectory with surface current (AVISO) deep current (ANDRO)



Dashboard – Map – Other Layers

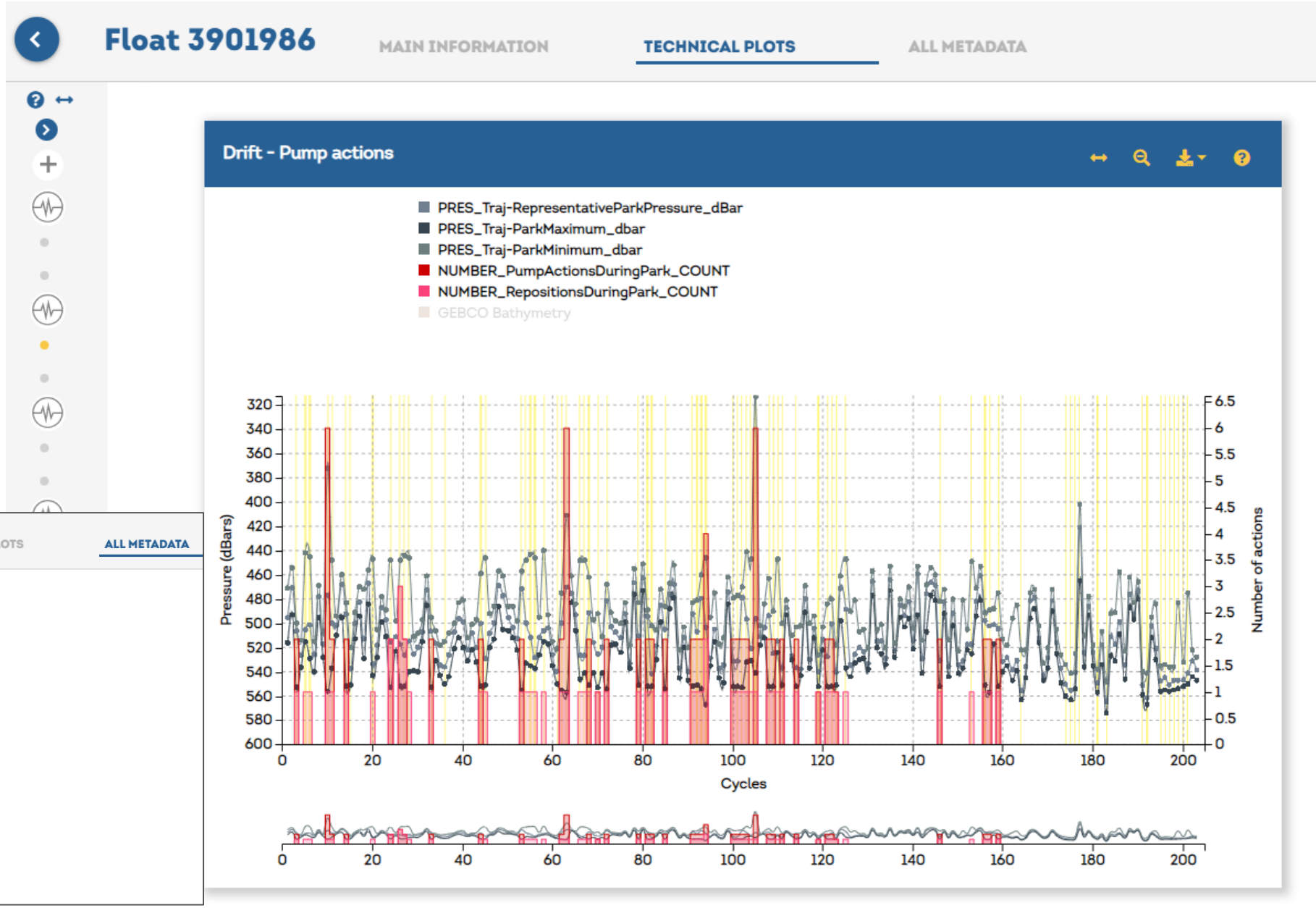
- Sea Surface Temperature
- EEZ
- *(GetFeatureInfo not working currently)*

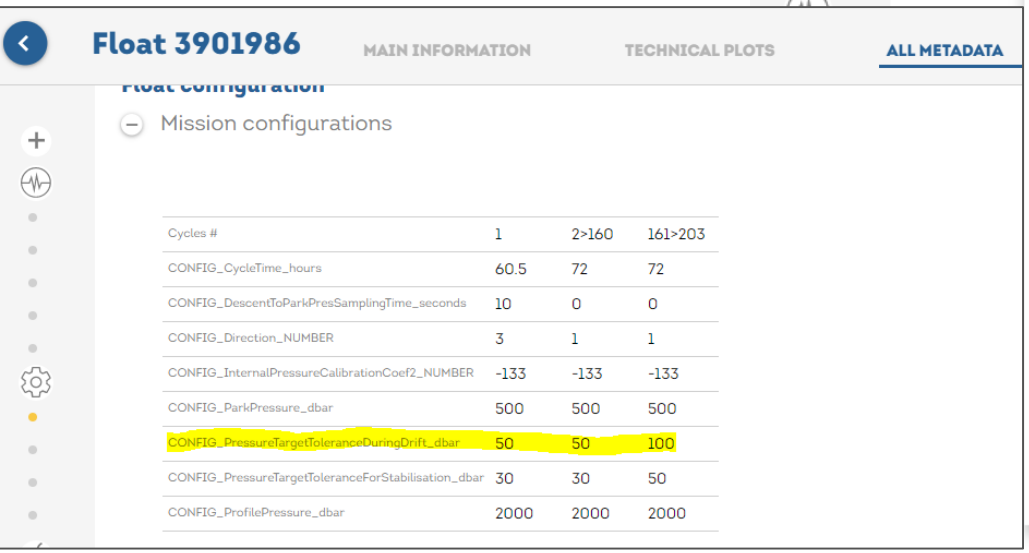




Float page – Technical plots – HYDRAULIC

- *Stabilisation problems during drift (pump actions)*
- *Increased tolerance after cycle 161*

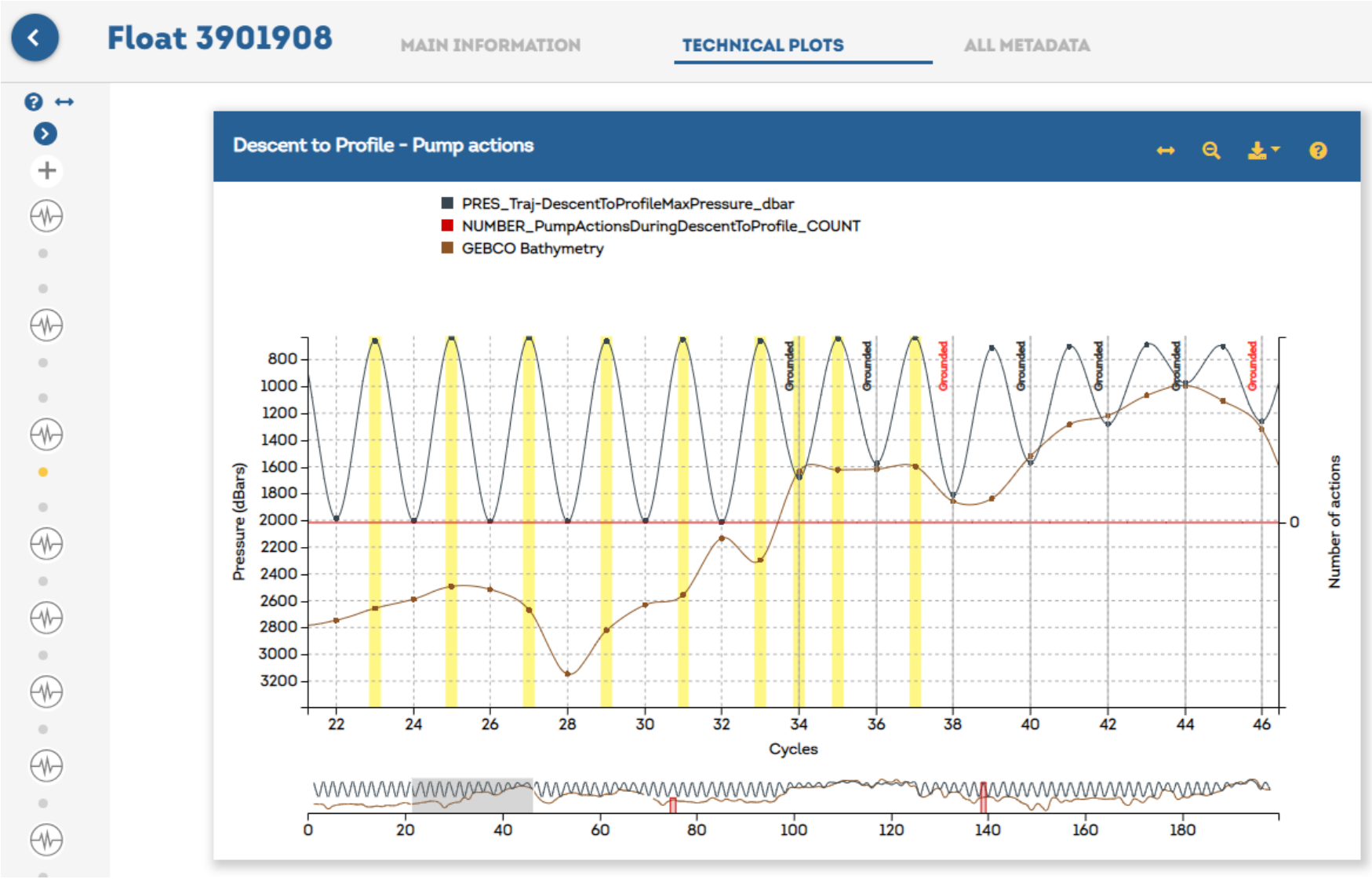




Cycles #	1	2>160	161>203
CONFIG_CycleTime_hours	60.5	72	72
CONFIG_DescentToParkPresSamplingTime_seconds	10	0	0
CONFIG_Direction_NUMBER	3	1	1
CONFIG_InternalPressureCalibrationCoef2_NUMBER	-133	-133	-133
CONFIG_ParkPressure_dbar	500	500	500
CONFIG_PressureTargetToleranceDuringDrift_dbar	50	50	100
CONFIG_PressureTargetToleranceForStabilisation_dbar	30	30	50
CONFIG_ProfilePressure_dbar	2000	2000	2000

Float page – Technical plots – HYDRAULIC

- *Targeted profile pressure not reached for alternate cycles (@700 dbar)*
- *Decrease DescentSpeed after cycle 38*



Dashboard – Statistics – MISSING CYCLES

- *Check the floats that have missing cycles*

(difference between number of cycles and max cycle number)

- *Under ice, not decoded, etc.*

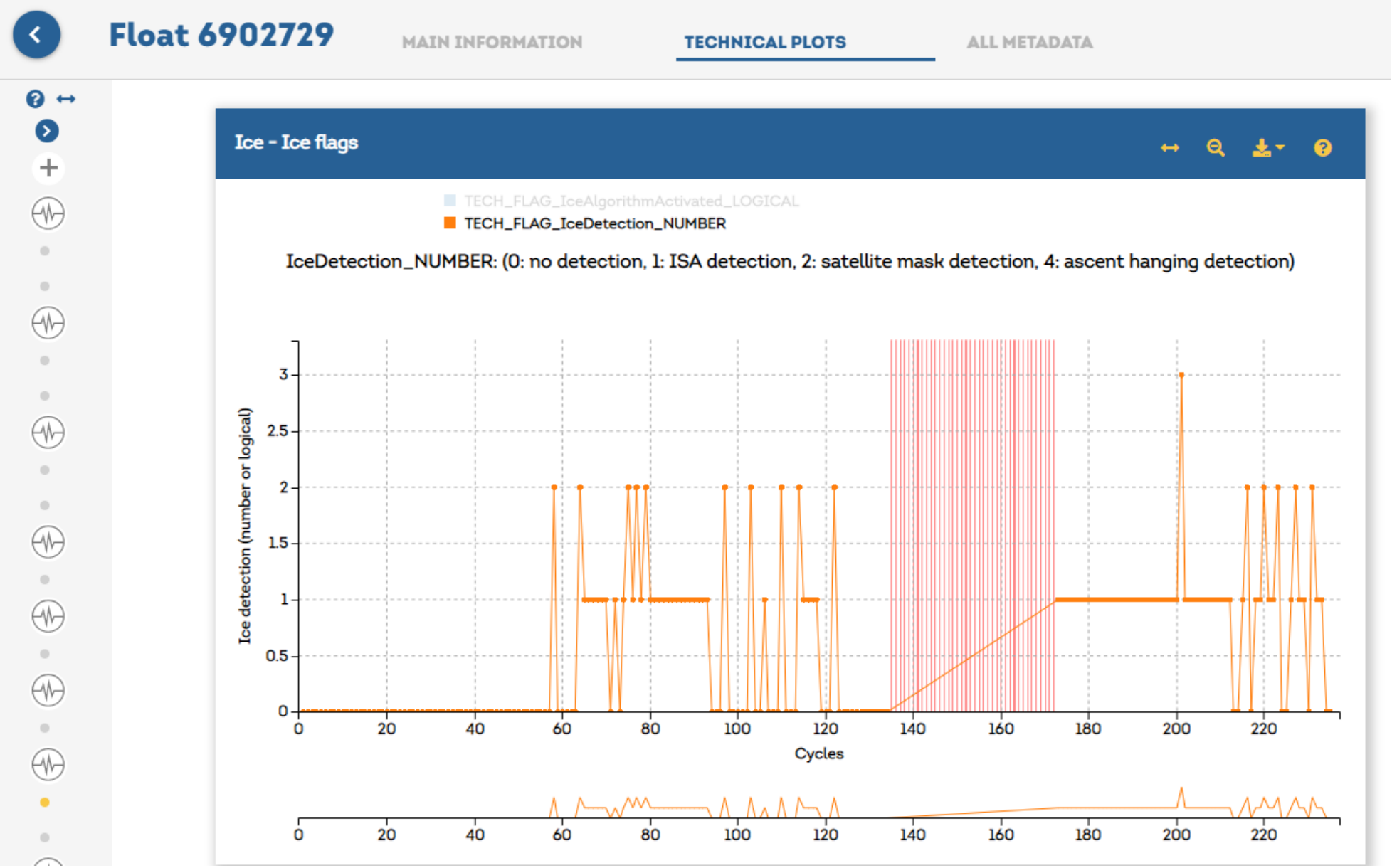
152 floats

	Nb floats	Nb cycles
CTD	6 3.95%	14 0.09%
FLAG_InvalidSalinity_LOGICAL	6 3.95%	7 0.05%
FLAG_InvalidTemperature_LOGICAL	2 1.32%	7 0.05%
Hydraulic	151 99.34%	6413 41.32%
FLAG_Park_ImmersionDriftOutTolerance_LOGICAL	147 96.71%	2593 16.71%
FLAG_ProfileMaxPressureAnomaly_LOGICAL	142 93.42%	2158 13.9%
FLAG_MissingCycle_LOGICAL	13 8.55%	103 0.66%

3901842 3901851 3901863 3901874 3901879 3901885 3901899 3901902 3901906 3901909 3901938 3901957 3901982

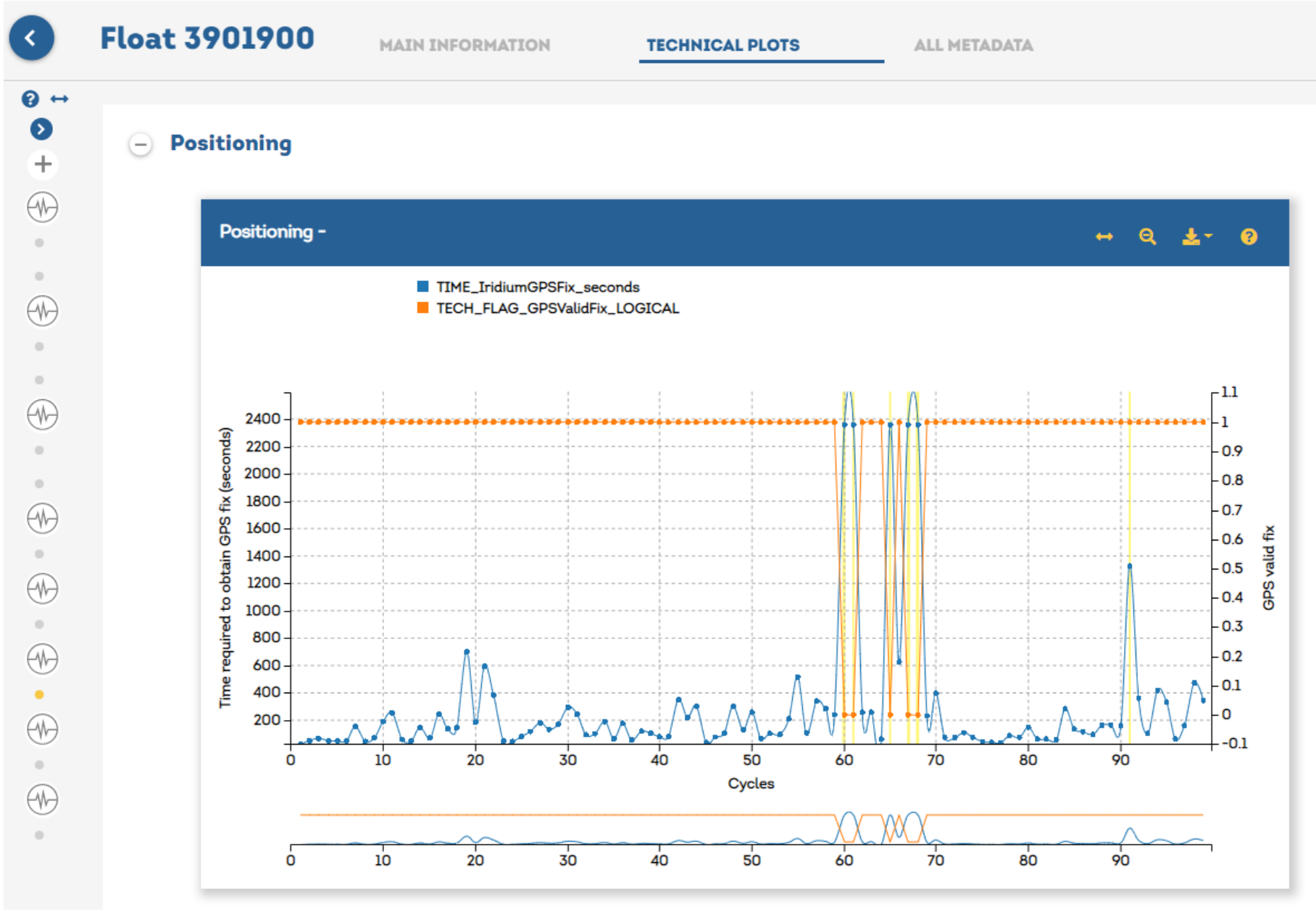
Float page – Technical plots – ICE

- *Ice detections*



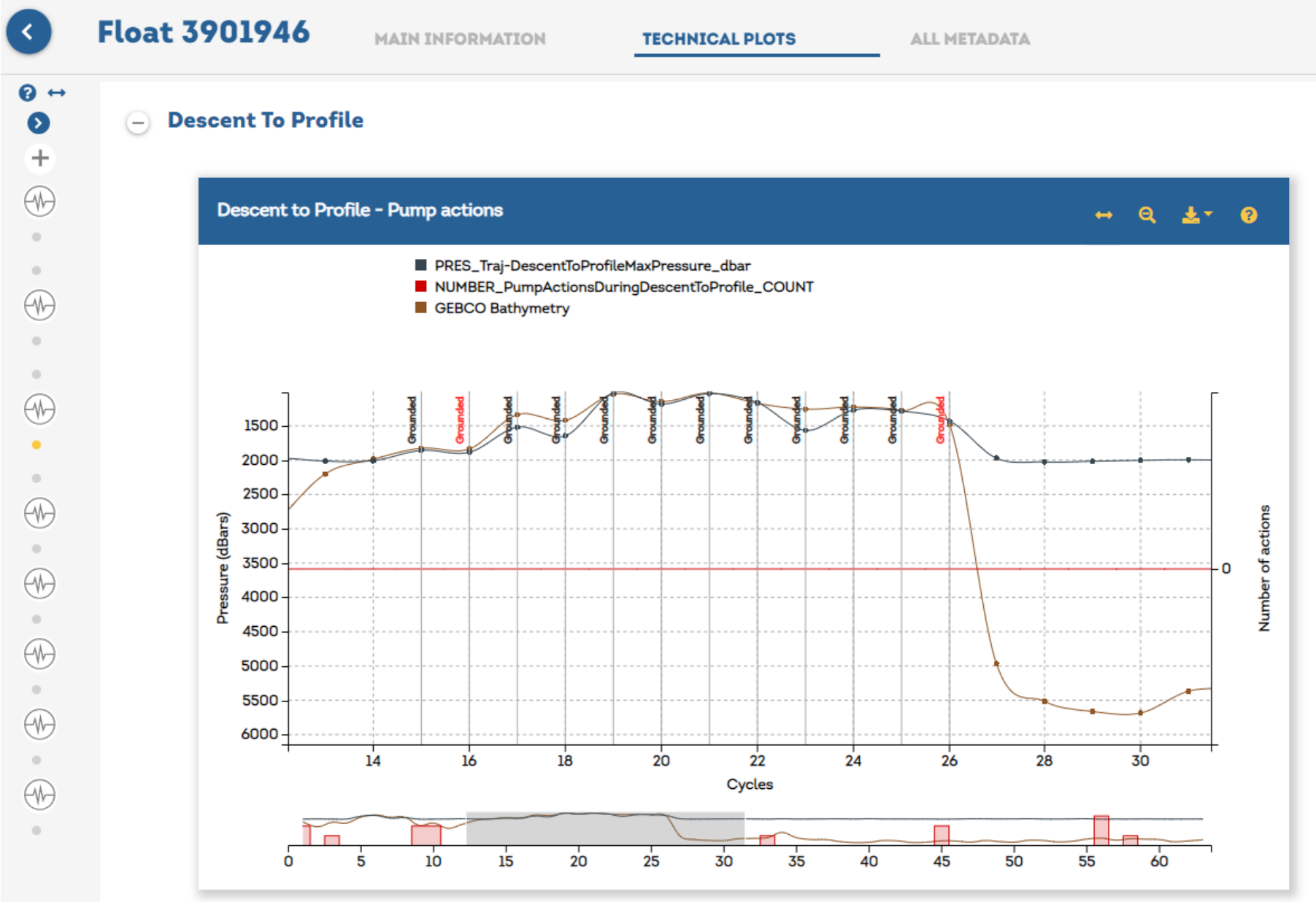
Float page – Technical plots – GPS

- *GPS valid fix*



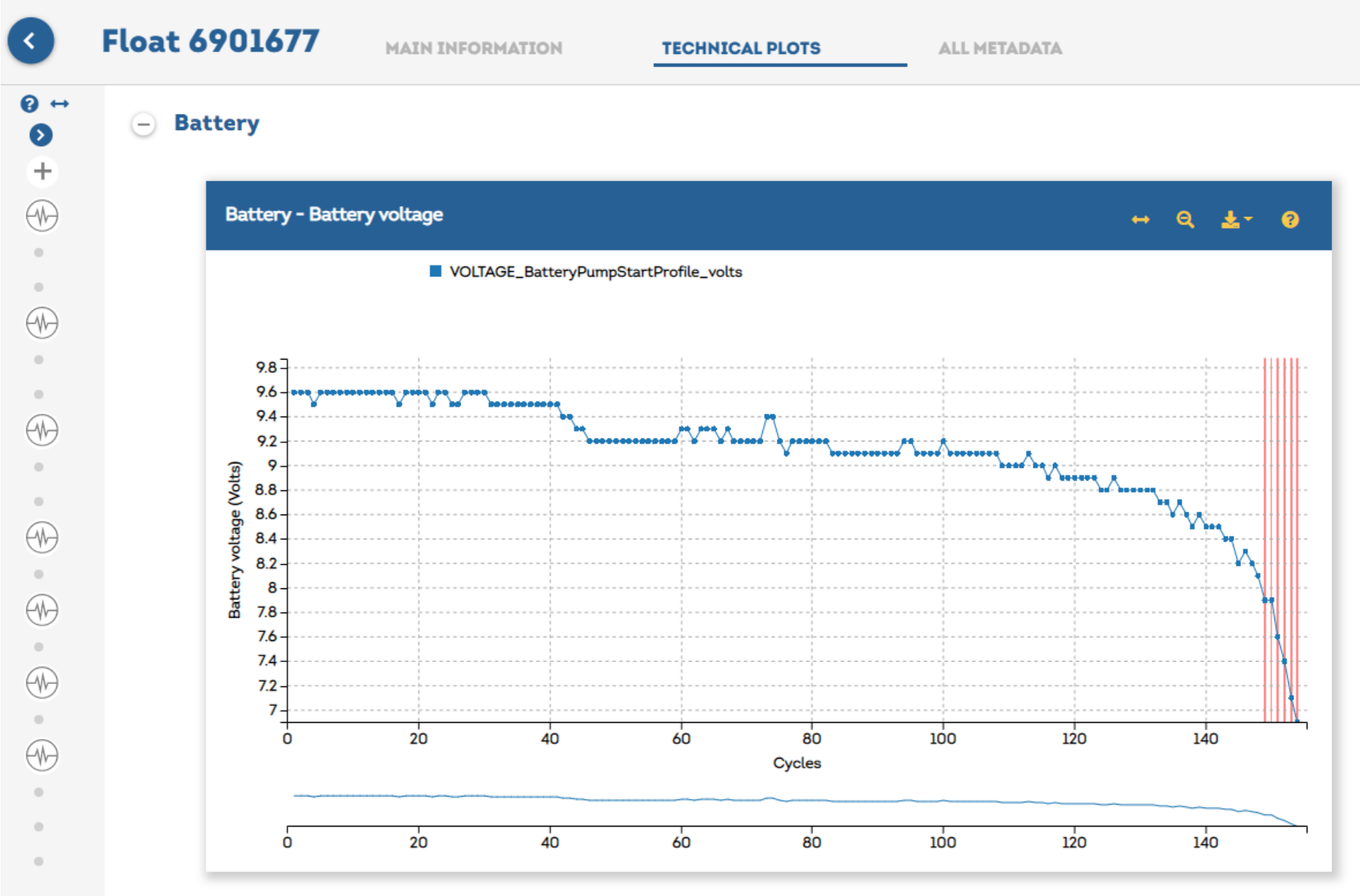
Float page – Technical plots – GROUNDING

- *By cycle phases*



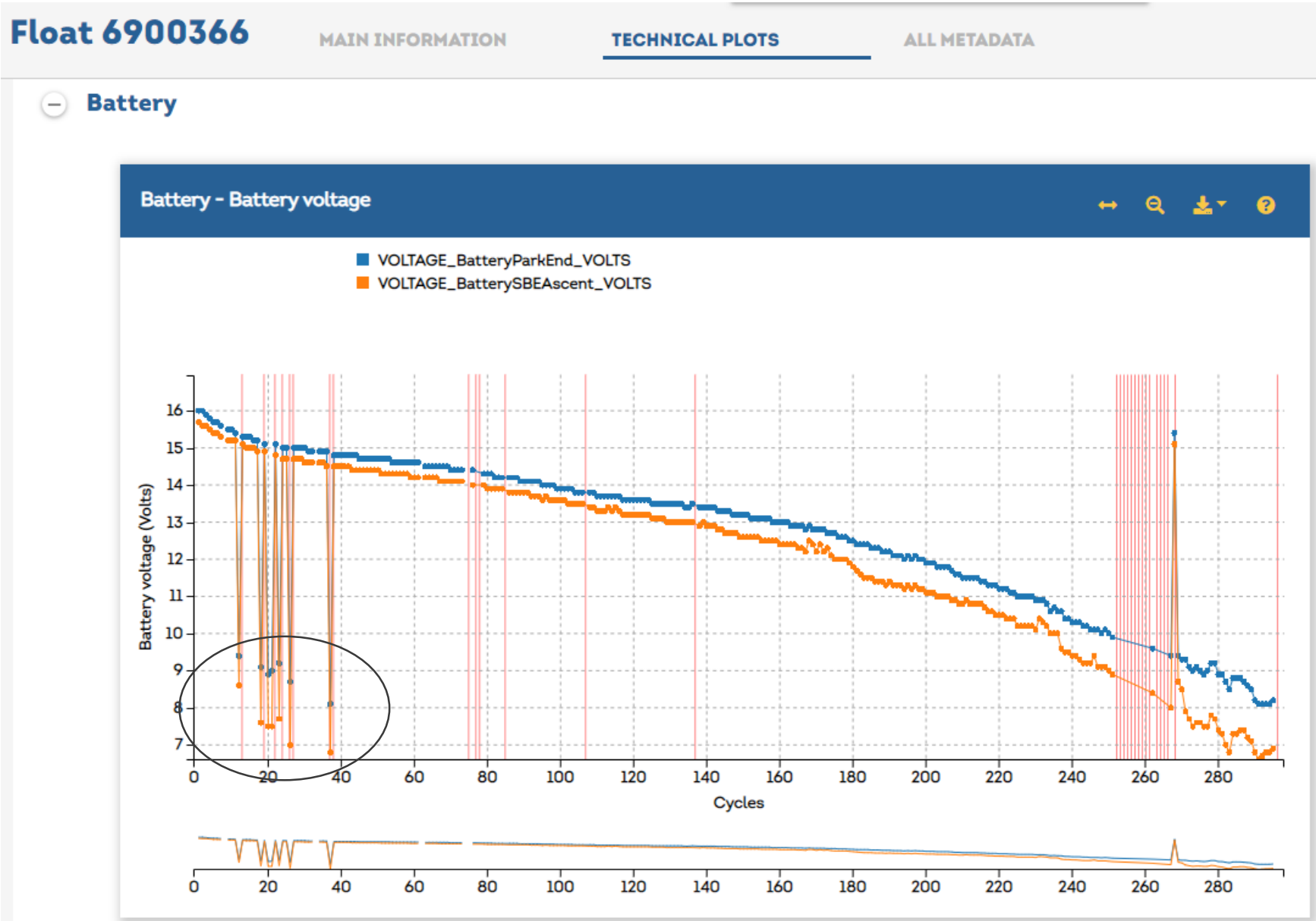
Float page – Technical plots – BATTERY VOLTAGES

- *Below threshold*
- *Drop (difference x% compared to last cycle)*



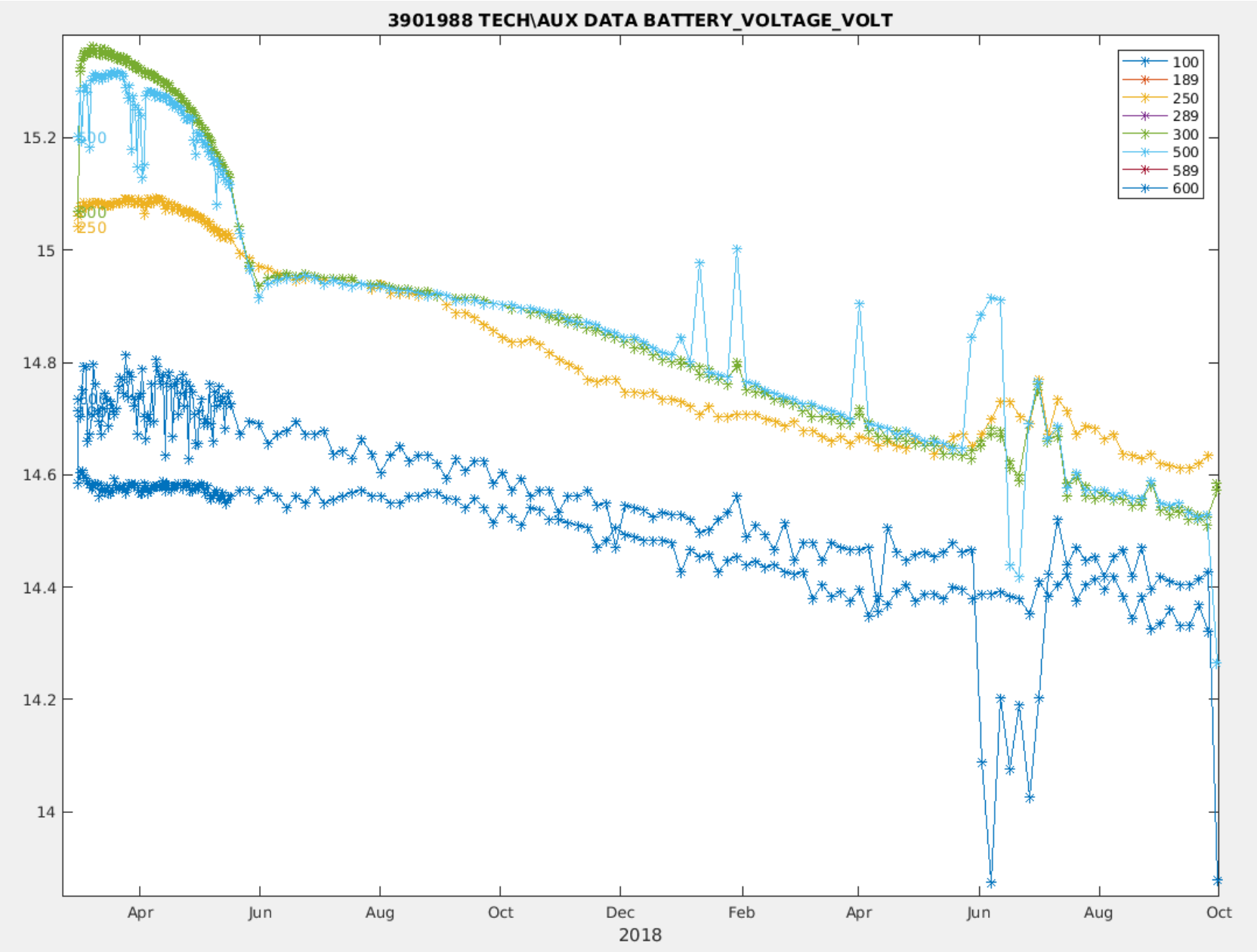
Float page – Technical plots – BATTERY VOLTAGES

- *APEX Alkaline*



Float page – Technical plots – BATTERY VOLTAGES

- *Recent APEX floats (APF11)*
- *Battery voltages stored as timeseries*
- *Not compatible with Argo format?*

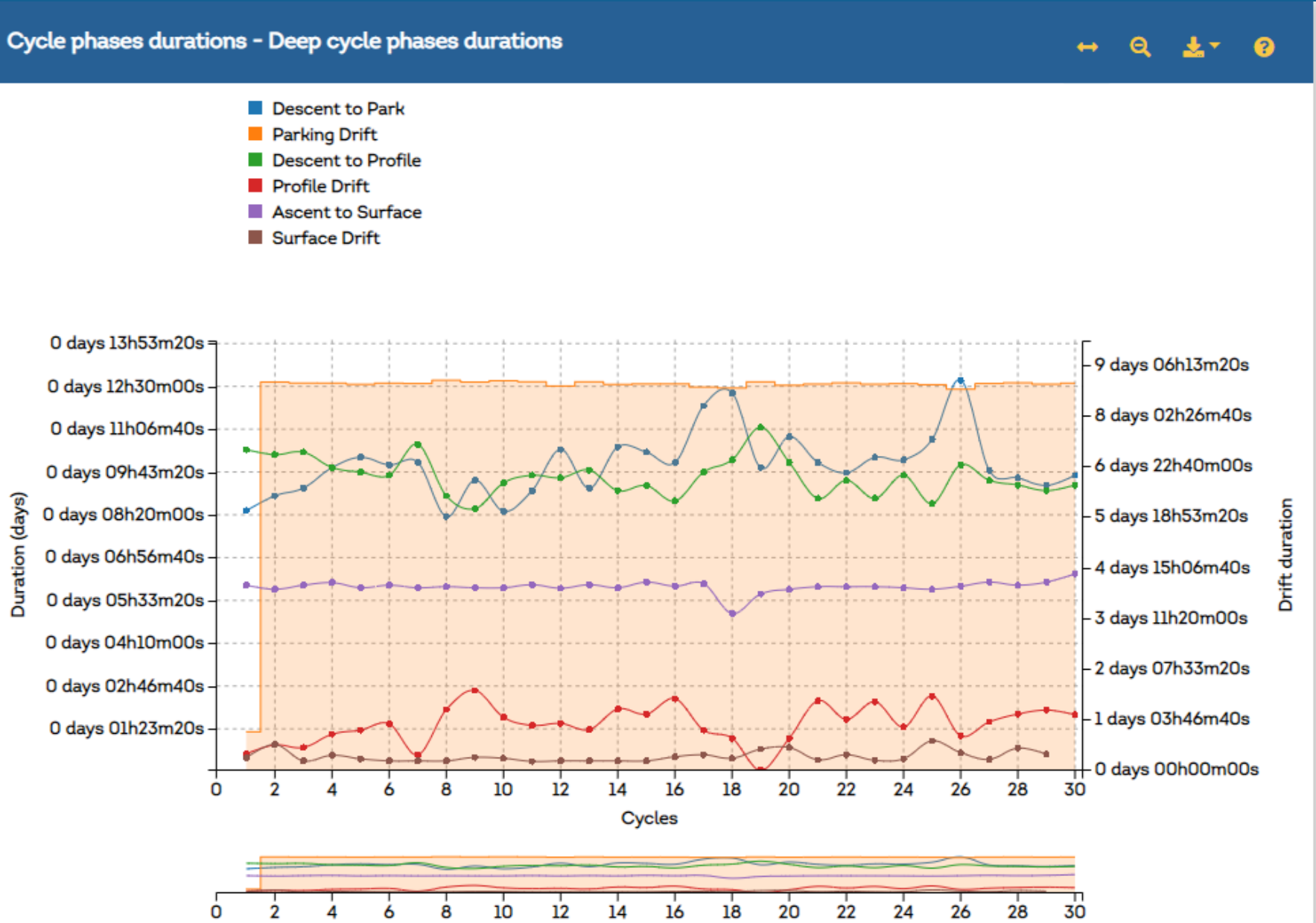


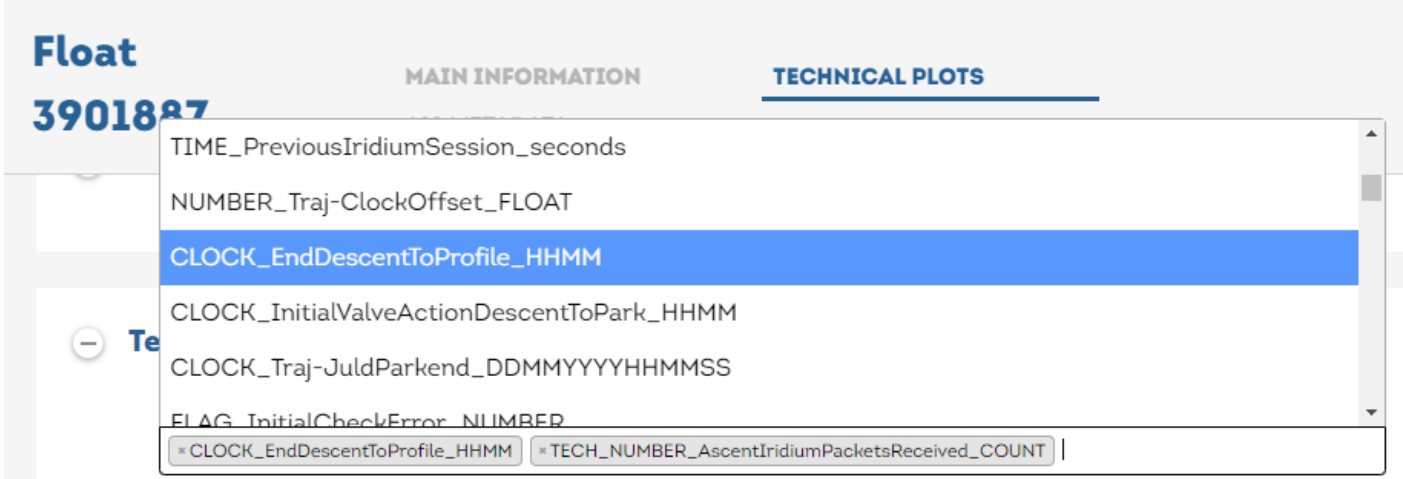
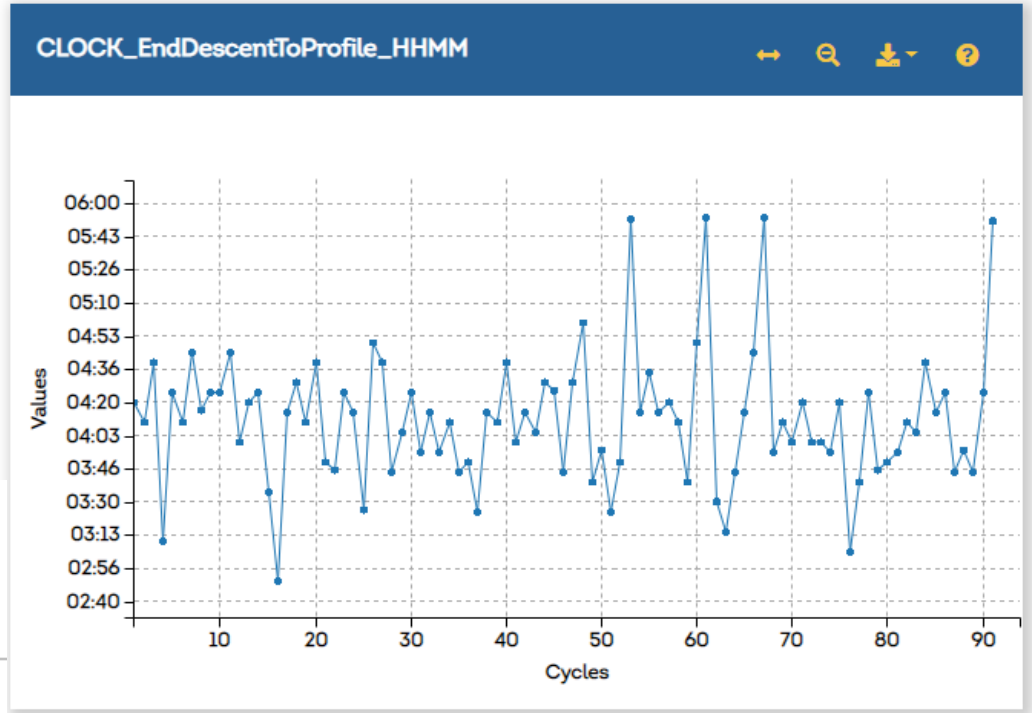
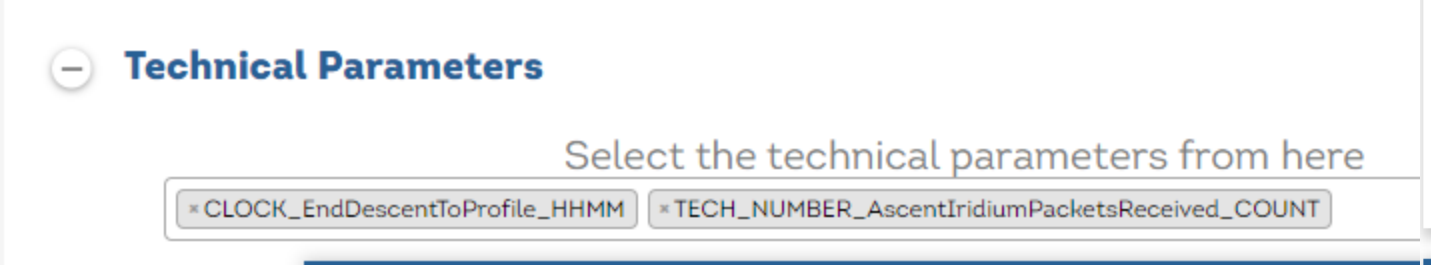
Float page – Technical plots – DATA TRANSMISSION

- *ARGOS transmission problems*
- *Some packets sent by the float are not received on shore*

Float page – Technical plots – DURATIONS

Durations of the different float cycle phases



Float page – Technical plots – ANY PARAMETER

Plot any technical parameter