



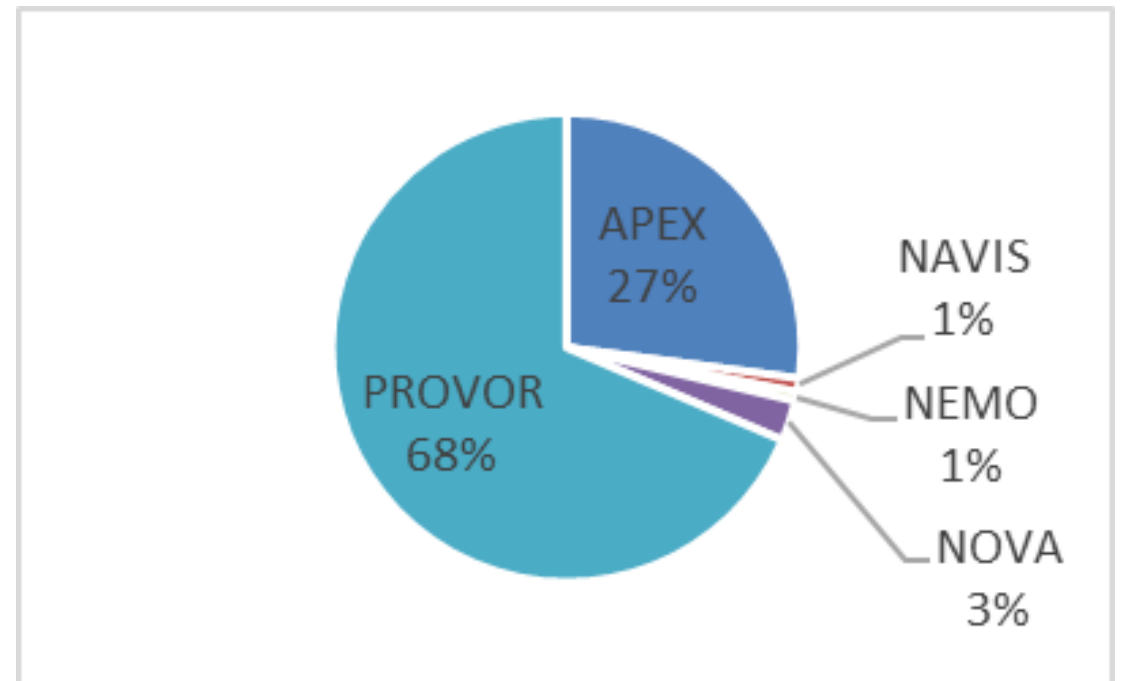
# Coriolis bio-Argo data management

- Coriolis DAC manages a matlab data processing chain for Argo floats, including bio-Argo data. Whenever new or improved specifications are issued, the data processing is updated.
- Since 2015, Provor floats bio-Argo data are distributed on Argo GDAC. They feature version 3.1 core and bio profiles, trajectories, metadata and technical data.
- Since 2016, bio-Argo data from Apex and Nova floats are managed in V3.1 format.
- The other bio-Argo floats (Navis and Nemo) are distributed in V3.0 data files (from a separate data processing chain)  
The transition to V3.1 is underway.



- In September 2016, bio-Argo profile files from 321 floats were available on Coriolis DAC

Bio-Argo floats processed by Coriolis DAC				
Family	nb versions	nb floats	nb profiles	nb cycles
APEX	21	87	10 459	10 243
NAVIS	1	3	394	394
NEMO	1	2	297	297
NOVA	2	9	297	279
PROVOR	21	220	77 083	27 163
<b>Total</b>	<b>46</b>	<b>321</b>	<b>88 530</b>	<b>38 376</b>





# Overview of Coriolis bio-Argo floats

- Iridium rudics bi-directional communication or Argos
- Six sensors are fitted on the floats (in addition to SBE41CP salinity sensor)

- AANDERAA\_OPTODE\_4330 & 3830 Aandera oxygen sensor
- C\_ROVER Wetlabs transmissiometer
- ECO\_PUCK Wetlabs fluorometer, turbidity, scattering
- SATLANTIC\_OCR504 Satlantic Irradiance sensor
- SUNA\_V2 Satlantic nitrate sensor

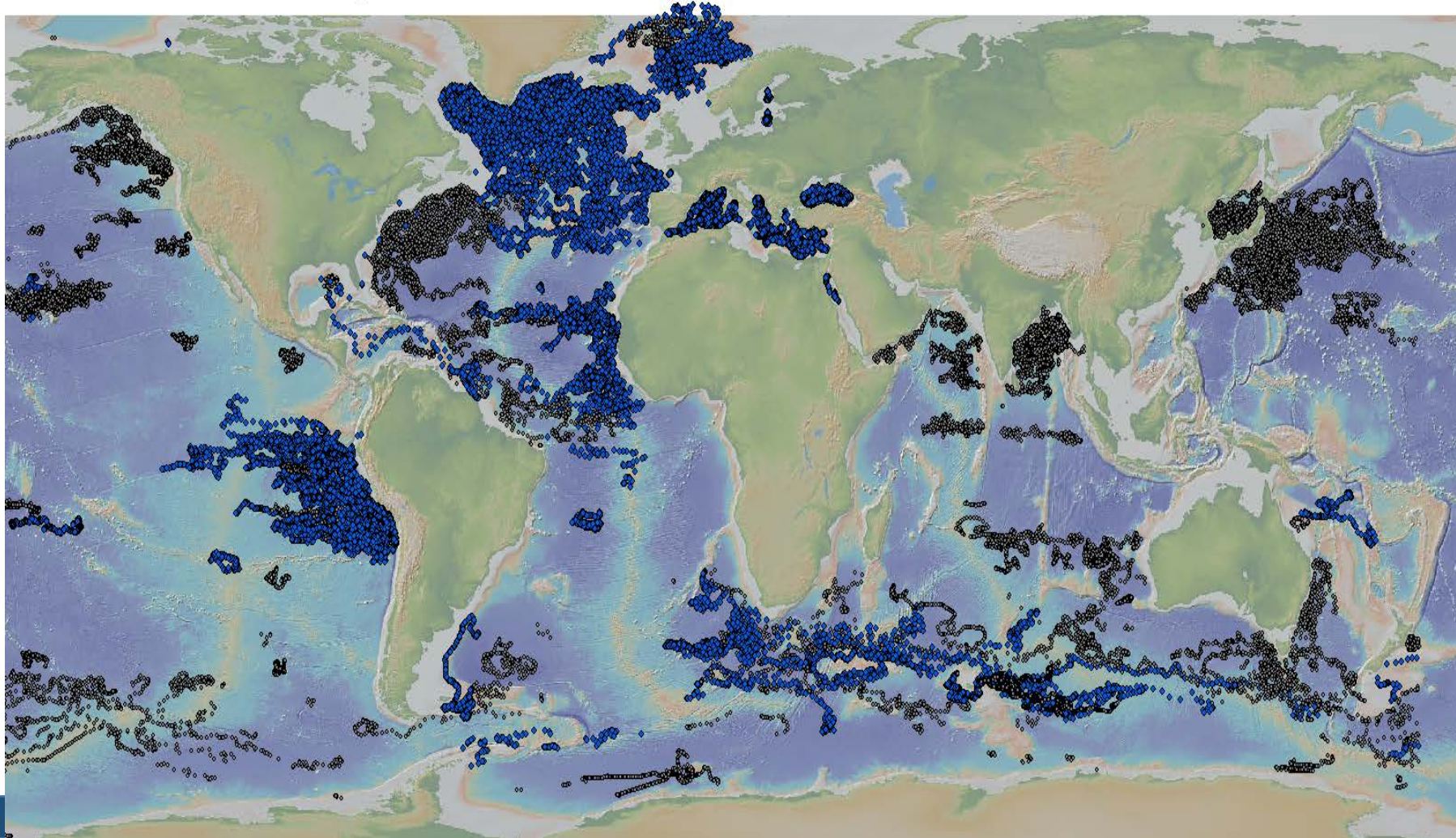
Sensor type	nb floats	nb profiles
AANDERAA_OPTODE_3830	20	2 315
AANDERAA_OPTODE_4330	133	17 196
C_ROVER	12	2 596
ECO_PUCK	97	46 468
SATLANTIC_OCR504	96	30 874
SUNA_V2	35	4 225

- More than 80 parameters managed : core-argo, b-argo, i-argo parameters  
These parameter include oxygen, chlorophyll, turbidity, CDOM, back-scattering, nitrate, bisulfide, radiance, PAR.
- Real time QC is applied on oxygen (DOXY) and chlorophyll (CHLA)



# Map of Coriolis bio-Argo floats

- Blue dots : 38 376 bio cycle-profiles from 321 floats
- Grey dots: the others DACs bio-Argo floats





# Coriolis float decoder

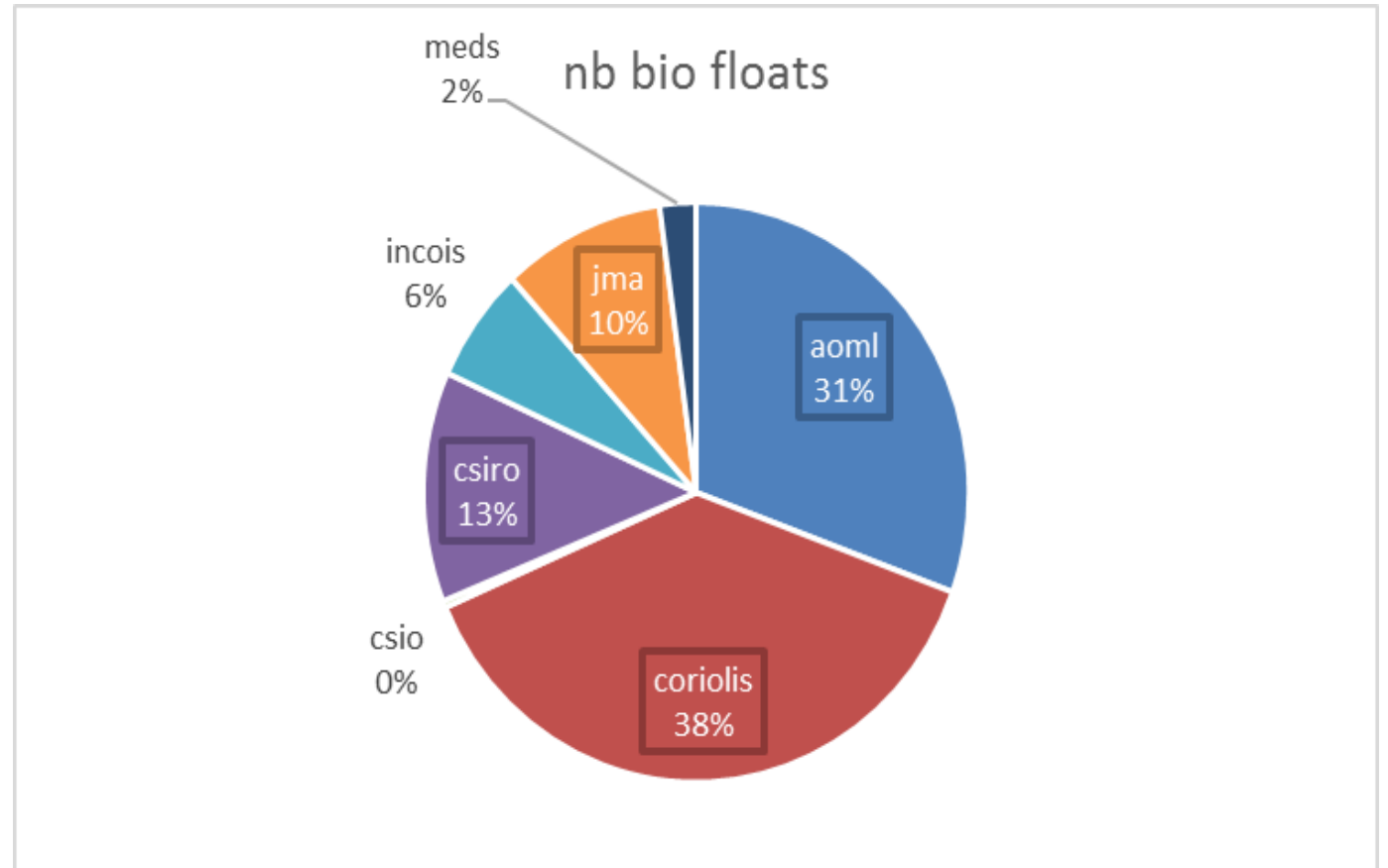
- The Coriolis decoder for Argo & bio-Argo floats is publicly available
  - <http://dx.doi.org/10.17882/45589>
- The main function of the decoder is to format the float data (metadata, measurements, technical data) into four Argo NetCDF CF files.
- The decoder applies Real Time Quality Control (RTQC) tests on Argo profile and trajectory files
- The floats metadata, the NetCDF features are stored in internal JSON files
- Some code is used for both floats and gliders decoder : parameter calculation, NetCDF attributes, quality control



# Bio-Argo data on GDAC, from 7 DACs

- On September 20th, 559 floats from 7 DACs reported bio parameters  
Source : [ftp://ftp.ifremer.fr/ifremer/argo/argo\\_bio-profile\\_index.txt](ftp://ftp.ifremer.fr/ifremer/argo/argo_bio-profile_index.txt)

DAC	nb bio floats	nb bio files
aoml	171	22 324
coriolis	212	27 300
csio	2	371
csiro	72	18 635
incois	36	3 290
jma	54	7 151
meds	12	256
<b>Total</b>	<b>559</b>	<b>79 327</b>





# Bio-Argo data on GDAC, from 7 DACs

## ■ Bio-Argo floats

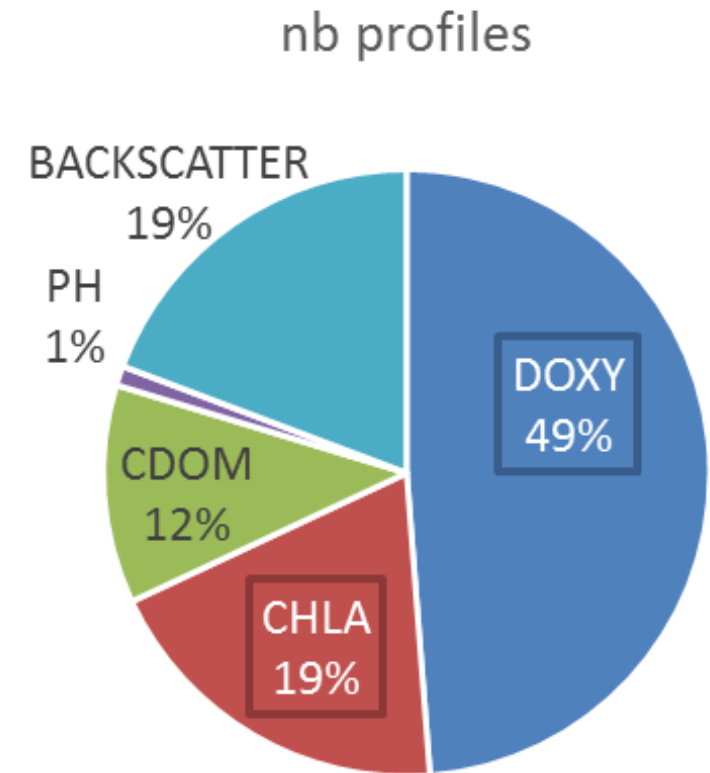
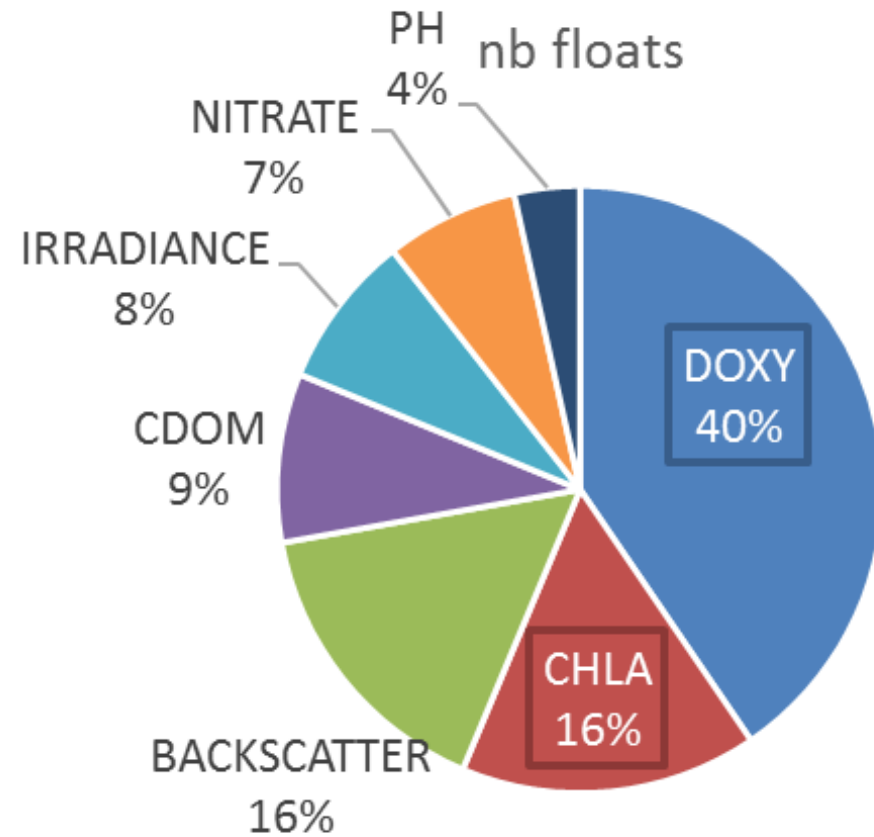
Parameter	aoml	coriolis	csio	csiro	incois	jma	meds	total
DOXY	171	172	2	68	36	47	12	508
CHLA	43	101	-	20	35	-	-	199
CDOM	12	97	-	4	-	-	-	113
PH	43	-	-	1	-	-	-	44
NITRATE	48	38	-	3	-	-	-	89
BACKSCATTER	43	101	-	20	35	-	-	199
IRRADIANCE	-	100	-	3	-	-	-	103

## ■ Bio-Argo profile files

Parameter	aoml	coriolis	csio	csiro	incois	jma	meds	total
DOXY	22 324	20 130	371	18 631	3 290	6 345	256	71 347
CHLA	1 438	15 751	-	7 900	3 104	-	-	28 193
CDOM	198	15 158	-	1 662	-	-	-	17 018
PH	1 323	-	-	205	-	-	-	1 528
NITRATE	1 495	4 374	-	774	-	-	-	6 643
BACKSCATTER	1 438	15 751	-	7 900	3 104	-	-	28 193
IRRADIANCE	-	15 396	-	488	-	-	-	15 884



# Bio-Argo data on GDAC, from 7 DACs







# Bio-Argo data on GDAC, from 7 DACs

- Blue: oxygen
- Green: chlorophyll
- Red: nitrate

