

## 2008' Strain Gage Buoy Test



# 15 buoys from 3 manufacturers



# Clearwater



30.5 cm in diameter



61 cm in diameter  
5.00 metres in length

# Pacific Gyre



30.5 cm in diameter



61 cm in diameter  
4.88 metres in length



# Technocean



40.6 cm in diameter

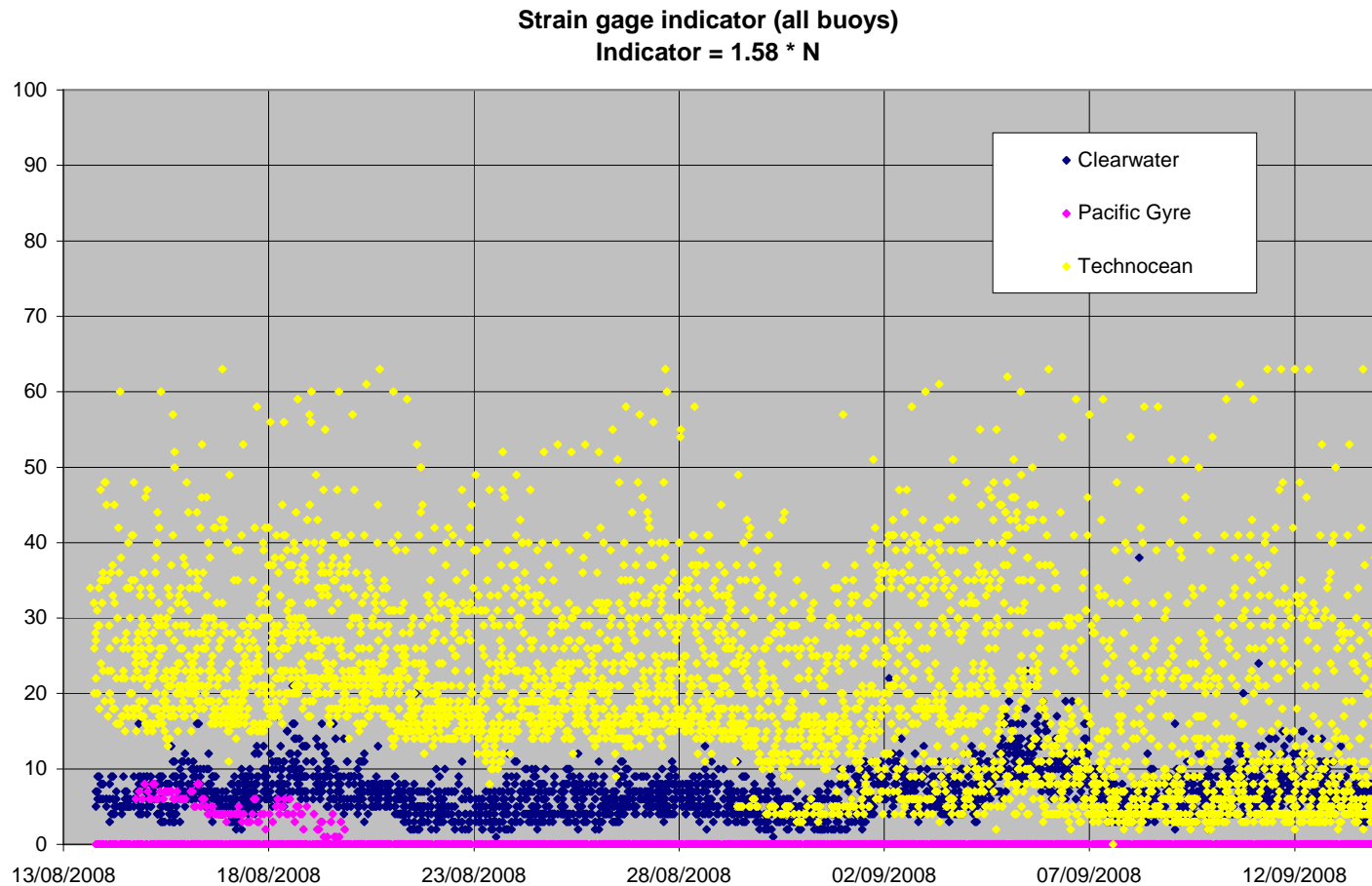


61 cm in diameter  
6.10 metres in length

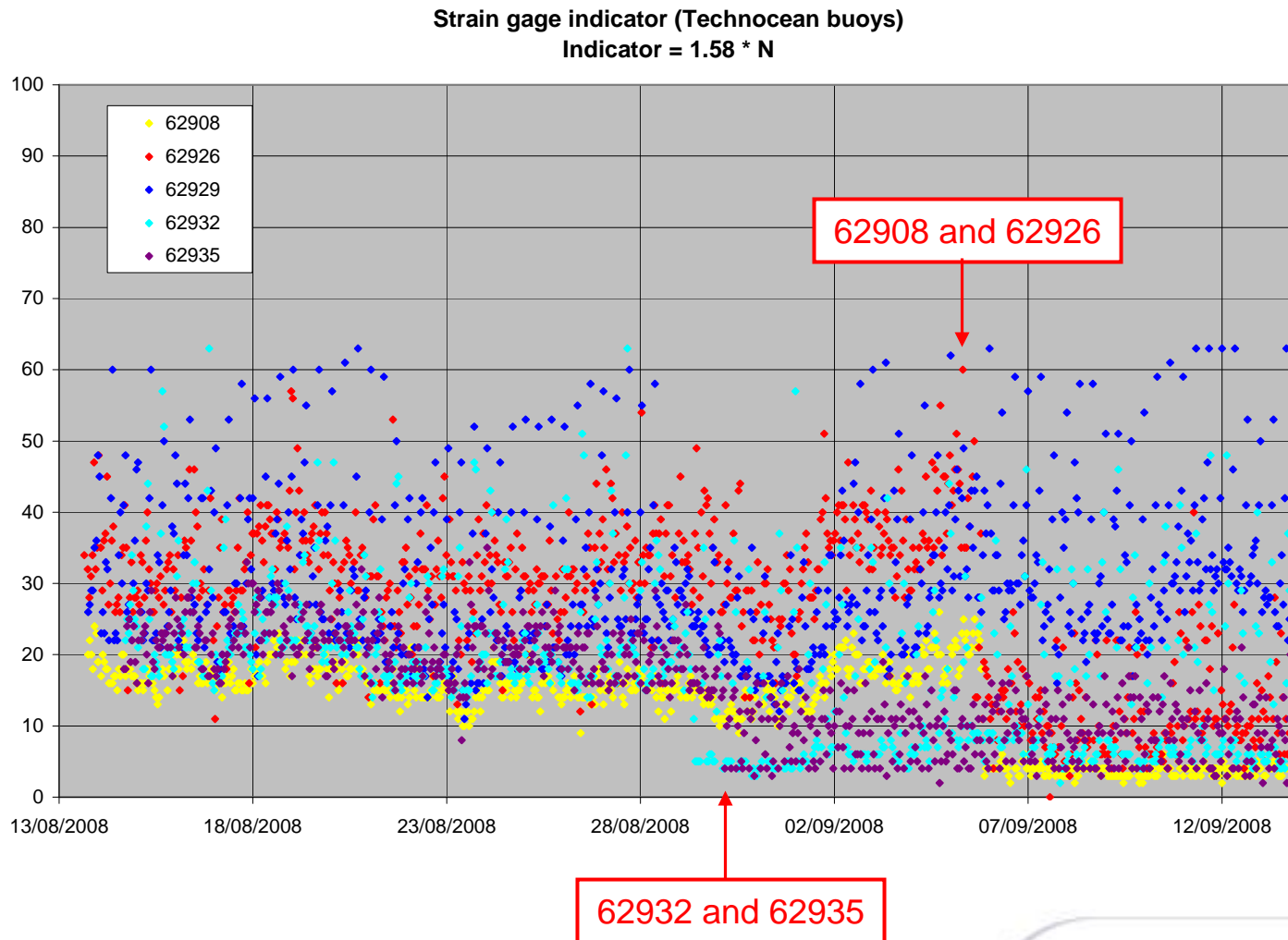
# Summary of characteristics

	Clearwater	Pacific Gyre	Technocean
Float weight	9.0 kg	9.1 kg	13.7 kg
Drogue weight (in air)	7.2 kg	9.1 kg	7.9 kg
Total weight	16.2 kg	18.2 kg	21.6 kg
Float diameter	30.5 cm	30.5 cm	40.6 cm
Float buoyancy	14.9 kg	14.9 kg	35.0 kg
Drogue diameter	61 cm	61 cm	61 cm
Drogue length	500 cm	488 cm	610 cm
Nb of battery blocks	4	4	8
Nb of elements per block	9	8	8
Total capacity (Ah)	54 Ah	48 Ah	96 Ah
Barometer	Druck	Honeywell	Honeywell

# Strain Gages (all buoys)



# Drogue Losses (Technocean)

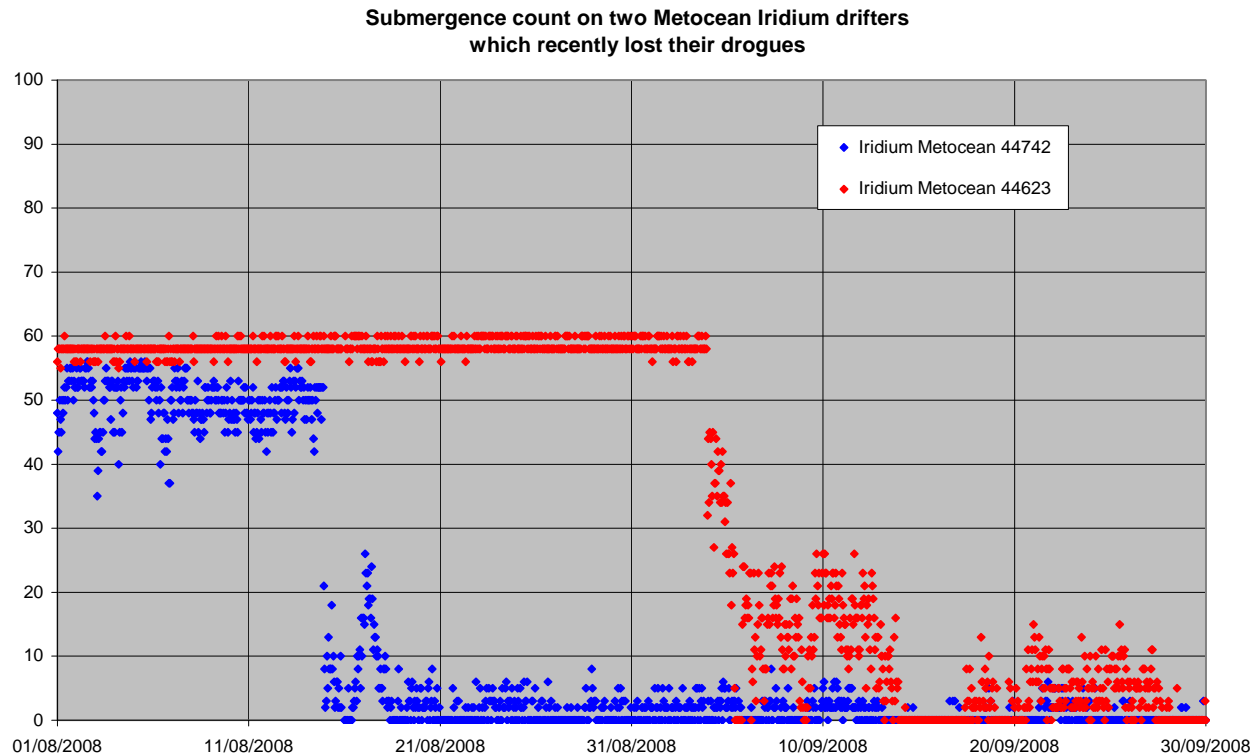




# Drogue presence sensor

## Question :

- why trying to use a new sensor (strain gage) - perhaps complex to tune – since we have an excellent one (submergence detector) ?



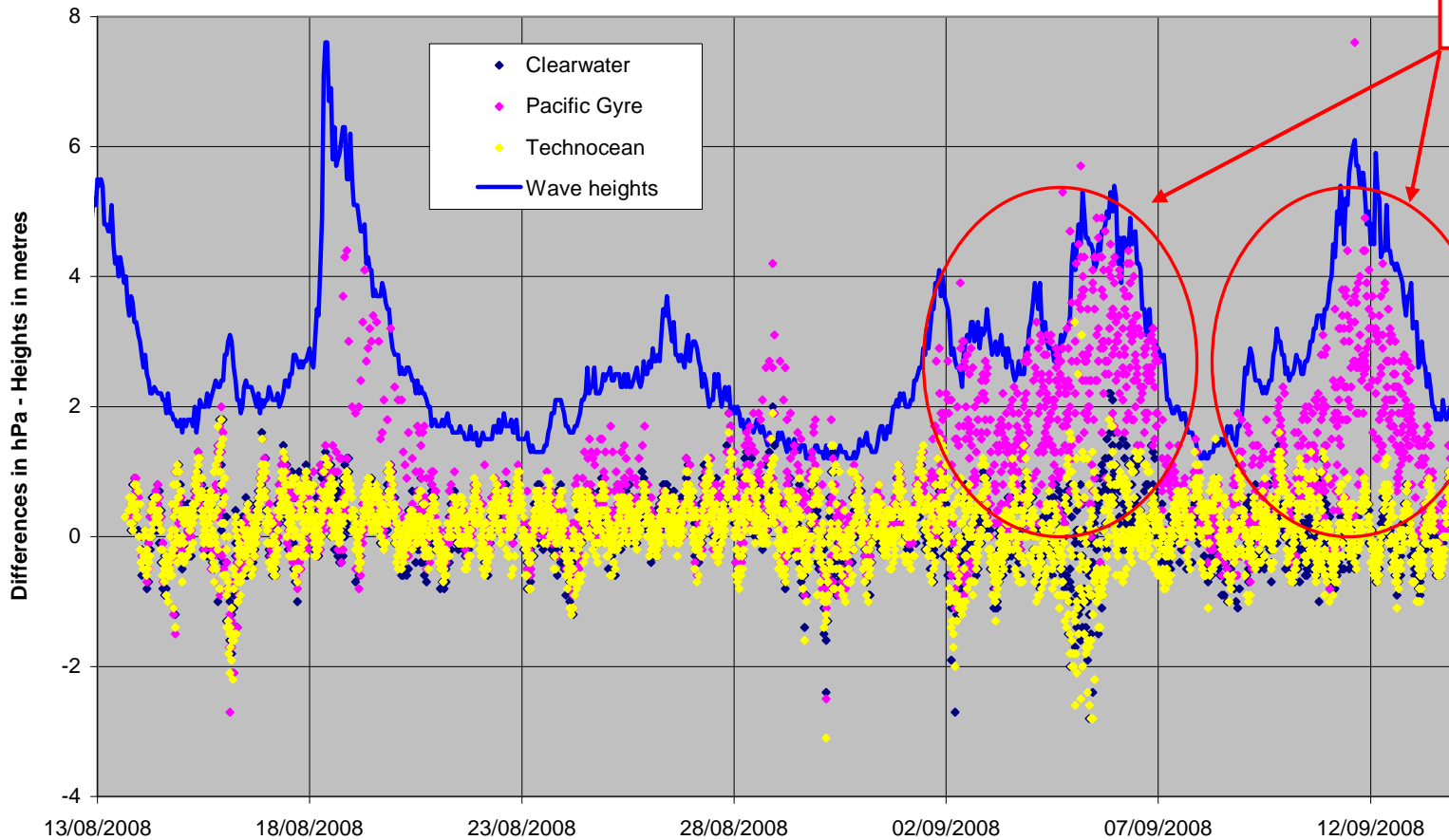
# Drogue attachments

- **All Technocean buoys lost their drogues** between 15 and 35 days after deployment
  - One buoy was recovered after 38 days at sea
  - Cable cut just above the upper ring of the drogue (see picture)
- According to the strain gage indicator, and despite the weak signals, it seems that **all Clearwater buoys have their drogue still attached** 80 days after deployment
- The presence/absence of drogue has **not been studied** in depth **on Pacific Gyre buoys** since the strain gage does not work on these buoys



# Air pressure

Air Pressure differences (Obs - model)  
+ Wave heights at Brittany Buoy (47.5N - 8.5W)



Lack of accuracy  
for Pacific Gyre

All 5 buoys  
present the same  
symptoms

# Data availability

	On land	At sea	Remarks
Clearwater	76 %	83 %	No historical data
Pacific Gyre	81 %	82 %	No historical data
Technocean	97 %	99 %	Report of historical observations

## Average number of Argos fixes over 48 hours

- on land, prior to the deployment
- at sea, 3-4 days after deployment

*(Each figure represents an average of 5 buoys)*

# Location availability

	On Land		At Sea		Diff. Sea/Land on total
	Class 3	Total	Class 3	Total	
Clearwater	22	45	4	32	-29%
Pacific Gyre	17	38	5	25	-34%
Technocean	18	31	6	38	+20%

## Percentage of hourly reports received over 48 hours

- on land, prior to the deployment
- at sea, 3-4 days after deployment

*(Each figure represents an average of 5 buoys)*



# Summary of the evaluation

	Clearwater	Pacific Gyre	Technocean
Air pressure	OK	Not sufficiently accurate	OK
Barometric tendency	Not consistent with WMO	Not measured	OK
Sea temperature	Acceptable after correction	OK	OK
Strain Gauge	Weak signal	No signal	Acceptable but should be improved
Drogue attachment	OK	Unknown	All broken
Data availability	Poor	Poor	OK
Data timeliness	OK	OK	OK
Argos positions	Less numerous	Less numerous	OK



# Questions ?