

2012-13 Salinity duplicates

Precision statement for replicate samples drawn from a single Niskin bottle:

The mean difference for Salinity: Bottle for the range 34.3109 to 34.6622 was 0.0015,
k = 26 (0 outlier removed) where k is the number of duplicates.

Precision analysis and the determination of outliers

Precision was determined by analyzing replicate samples drawn from one Niskin.

Outliers are discarded on the basis of Chauvenet's criteria. The statistic is calculated using the following formula:

$$\sigma = \left[\frac{1}{n-1} \sum_1^n (x_i - x_m)^2 \right]^{\frac{1}{2}}$$

The maximum deviation, dmax, is compared with the individual residuals from the original concentrations.

If a replicate's residual is greater than dmax, this reading can be rejected based upon Chauvenet's criterion.

Duplicate samples from a single Niskin bottle

Event Number	Sample Number	Station	Pressure dbar	Salinity 1	Salinity 2	Rejected yes / no
10	69	P4	1251.5	34.4695	34.4691	
10	71	P4	1000.7	34.3900	34.3851	
20	132	P8	2002.4	34.5886	34.5867	
20	135	P8	1001.5	34.3676	34.3676	
29	200	P12	3001.7	34.6480	34.6490	
29	205	P12	1000.5	34.3508	34.3508	
41	297	P16	3000.9	34.6622	34.6564	
52	373	P20	2999.8	34.6571	34.6573	
52	378	P20	999.2	34.3762	34.3753	
66	510	P26	2998.1	34.6545	34.6550	
66	515	P26	999.3	34.3780	34.3769	
87	674	P4	1000.8	34.3919	34.3930	
87	675	P4	802.0	34.3109	34.3133	