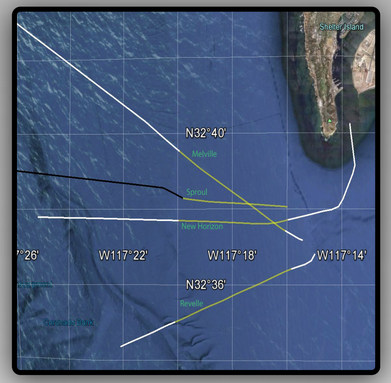
San Diego Chirp Test Site

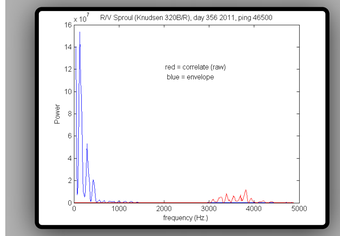
Purpose

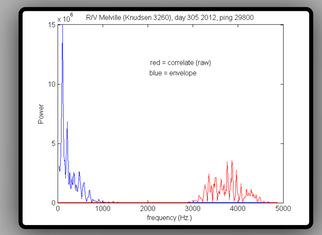
The San Diego Chirp Test Site is an area just outside of San Diego Harbor for comparing Sub-Bottom Profiler Chirp systems. This location was chosen for it's ease of access rather than it's geology. The intent is for chirp operators to see if their system is working and roughly how it compares with systems on other ships. We hope to expand this data set with examples from other UNOLS vessels that enter San Diego Bay. The intention is that the comparison is done after the fact and thus does not require much time by the shipboard personnel.



Signal Processing Theory to Observe

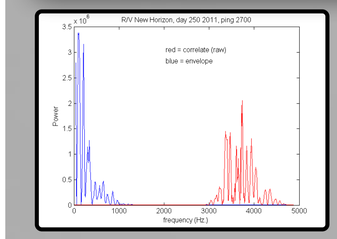
1. The correlation process compresses the pulse length, but not to a spike, thus a long sweep/pulse has a lower temporal resolution than a short sweep.
2. A longer sweep or pulse length has more energy and thus more depth penetration, but the spatial resolution is much lower.
3. The creation of an envelope is also called “basebanding” which lowers the frequencies.

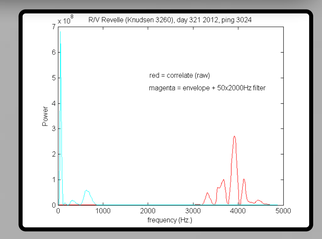




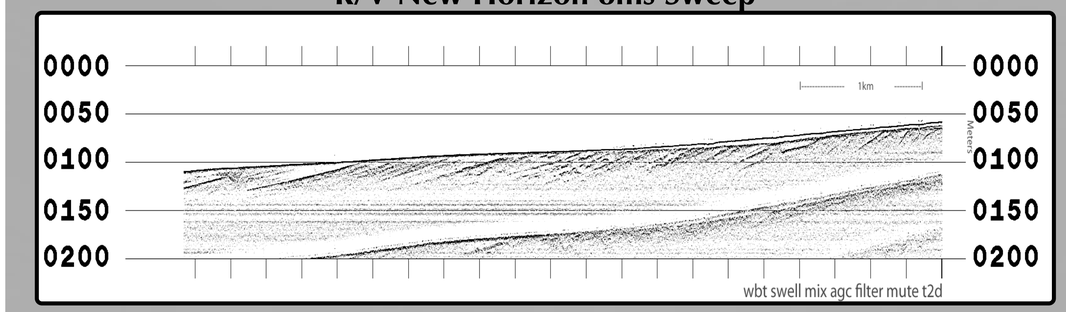
R/V Robert Gordon Sproul 2ms Sweep

R/V Melville 8ms Sweep

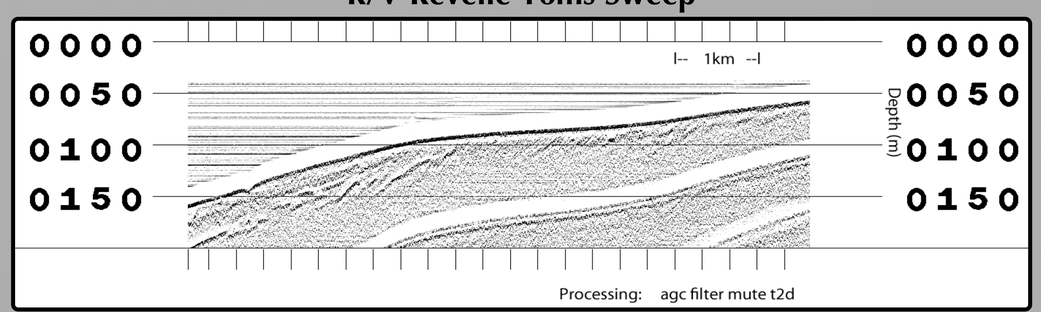




R/V New Horizon 8ms Sweep



R/V Revelle 16ms Sweep



Metadata

Acquisition Parameters	R/V Robert Gordon Sproul	R/V New Horizon	R/V Melville	R/V Roger Revelle
Pulse Length	2	8	8	16
Pulse Length	150	75	75	37.75
Ping Per Minute	11.1	9.6	11.2	10.25
Start Frequency	2307	2307	2307	2307
End Frequency	5307	5307	5307	5307
Ping Start Time	313/551/551	91	890	921/171
Tx Power	2 – 1	1	1	1
Rx Gain	0	2	0	3 – 2
Process Shift	1	0	2	0
Start Depth	0	0	250	0
End Depth	500/100/200	500	750	500
Data Rate	20008.04	20008.04	16666.66	16666.66
SEG-Y Sample Interval	49	49	60	60

Credits:

Paul Henkart

http://sioseis.ucsd.edu/SD_test_site.html