EXPORTS NE Pacific Context Situational Awareness
Date: **Mon- Sep 3, 2018 - JD 246**
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Weather Forecast Summary:
Tomorrow (Tue 9/04) will be rainy (~1" most in the early hours), wind 20kt from the N, cool (14°C). Wed in the early morn the wind may peak at 30 kts. ECMWF forecasts 20kt winds towards the end of the friday. And all models seem to think Saturday will have high wind (~25kt), but disagree on the direction. Half inch of rain wed and 0.2" fri and again sat.

Wavewatch3 forecasts tomorrow to have SWH values of ~2m building to 3m and up to nearly 4m wed (peak in the local morning hours). After that SWHs decrease on Thu ~3m decreasing to 2m. Fri 1.25m and Sat 2m.

Oceanography Summary:
Ocean Color: Yesterday no useful coverage, because of clouds. Today's images are not available yet.

Upper Ocean Profiles: Note that all near-real time SeaGlider data are only notionally processed and calibrated. SeaGlider CTD observations show SST values of ~14.3°C and MLDs 25 m and 32m for the last available dive (182). Over the past ten dives, there MLD varied between 26 to 35 m -- this less variable than earlier in the cruise. Strong pycnoclines are seen just beneath the MLD, between 28 and 39 m, and then again between 100 and 120m. Salinity values slowly increase with depth over the upper 90 m showing none of the strong gradient seen in temperature. Small (~0.1 ppt) near-surface fresh layers are seen in some of the glider profiles from the previous day. A strong stablizing halocline is found between 97 and 138m.

The last dive (182) the chlMax was ~1.1mg/m^3 at 40m. The 1% PAR depth is ~ 81m for dive 182. Over the last 10 dives, the peak in chl fairly uniform between 30 and 70 m depth. Surface values range from 10% of the peak value to nearly uniform up to the surface.

SST: The microwave SST distribution shows a large-scale (NW to SE) temperature gradient across the region, with colder waters to the NW, warmer waters to the SE. Some coherent mesoscale variations are seem in the microwave SST images.

Sea Level: Both absolute dynamic topography and sea level anomaly show that PAPA now sits in a large (100 km), coherent anti-cyclonic mesoscale eddy, NW of the center. EXPORTS is currently operating north and west of PAPA and currents there are to the NNE. Although this is a large eddy, its velocities are still relatively small (~5km/d), so this feature is unlikely to have a big impact on dispersion of deployed assets. At PAPA the absolute geostrophic velocity is 4.6km/d to the NNE.

Currents: Mercator products show surface currents at 11.7 km/d to the E at PAPA while geostrophic currents from altimetry show smaller currents 4.6km/d to the NNE. Spatial

current patterns for the two products differ substantially where the Mercator products are predicting largely eastward flows over the domain. At 95m Mercator is showing 5.7km/d to the NE. Mercator products also shows PAPA with an anticyclonic circulation but the patterns are more confused compared with the altimetry products.

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Weather forecast details

ECMWF,GFS,NEMS summary (note NEMS is offset 10hrs. UTC vs local issue. Windy.com acknowledge is error.)
sea state summary (wavewatch3 CDIP for UW wave rider mooring)
sea state summary (ECMWF WAM 13km)

Date	Wind(kn) "from the"	Tair(°C)	SWH(m) "from the"	Clouds(%)	Precip(")	URL	predictability
Tue 9/04	20N	14	2->3S	100	1.2	sep 04 forecast URL	medium
Wed 9/05	30N	14	4NNE	100	0.5	sep 05 forecast URL	medium
Thu 9/06	19N->13NW*	14	3->2N	100	--	sep 06 forecast URL	medium
Fri 9/07	14NW#	14	1.25N-SSE	100	0.2	sep 07 forecast URL	high
Sat 9/08	25NW??	13	2SSE	100	0.2	sep 08 forecast URL	medium

*GFS 15NE->8NNW
#ECMWF 20W
?? models differ 180deg on direction, but they ~25kts in common. ECMWF is NW. NEMS and GFS are SE.

Comparison of weather forecasts at Station P of 7 different model runs - 6 day forecast model comparison

Glider219- Real time depth profiles

Dive 182 2018-09-03 07:52-13:18 utc-9
Start 50.64N 144.79W
End 50.61N 144.77W

- locations/dates/times
- chlor_a
- fraction of surface PAR
- fraction of saturated O2
- Temperature
- Salinity
- Sigma0
- Optical scatter

Note: all NRT glider data are using manufacturers offsets / cal constants
Last couple days, dives 173-182 2018 Sep 01 12:13 utc-9 Sep 03 13:18 utc-9

- Locations
- chlor_a
- fraction of surface PAR
- fraction of saturated O2
- temperature
- Salinity
- Sigma0
- Blue scatter
- Red scatter

PMEL mooring
Last week of hourly air temp, wind, current, sss,sst - PMEL stack time series plot

Satellite Imagery:
Microwave SST: URL_10_deg & URL_5_deg,

Merged Satellite Altimetry:
Absolute Sea Level & Geostrophic Velocity - 10 degree box & 5 degree box
Sea level anom & anom currents - 10 degree box & 5 degree box

Mercator Ocean Products:
Surface currents, SST & SSH: 10_degree & 5_degree
95 m currents & salinity: 10_degree & 5_degree

Today's Situational Awareness data **on the google drive sitAware for 2017-09-03**
EXPORTS NRT Platform positions in graphic and tex format.