OMAS Runs for QPE Cruise; OR1 Leg 1 Aug. 24 - 29, 2009

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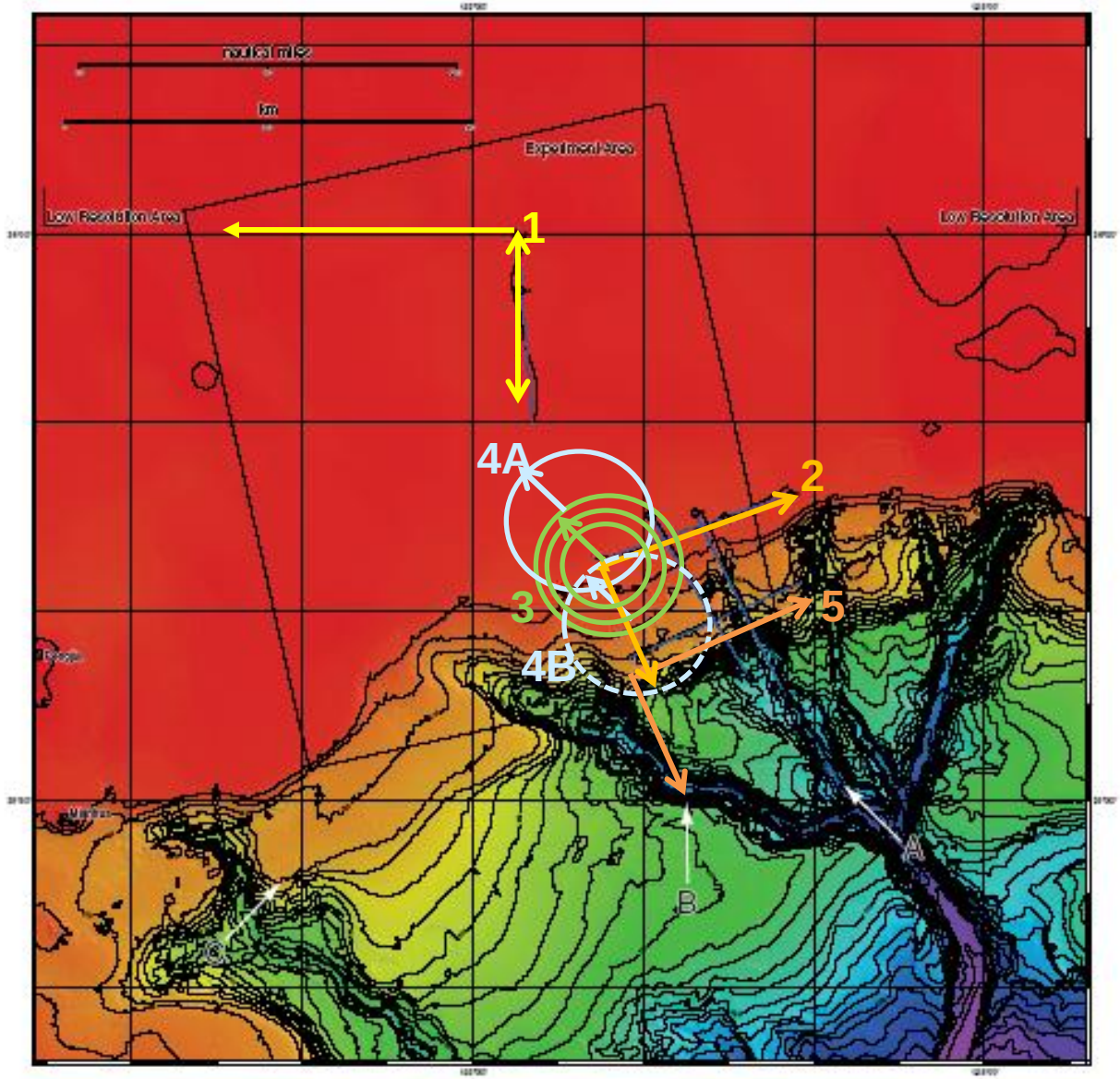
Aug. 17, 2009

Overview of TL Runs

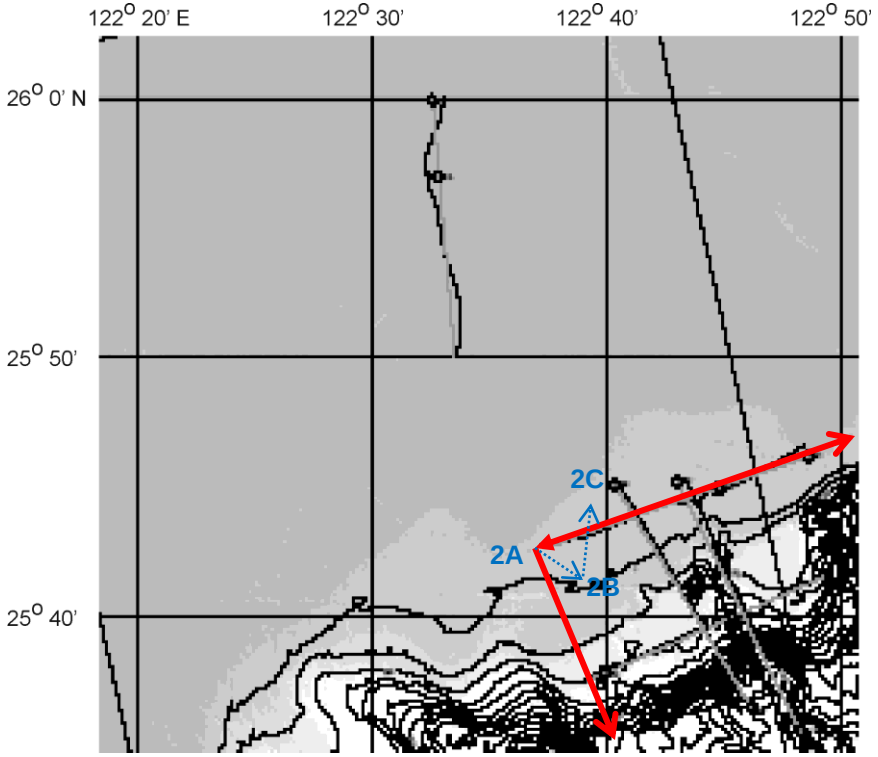
Date (tent.)	Event # Site	Description/Comments	# of OMAS
8/24	1 Site B	Along/Cross Shelf at ~125 m isobath , Starting at Centroid/Shakedown Tests for Models and Inversion	1
8/25	2 Site B	Two Simultaneous Circles (R≈7.5 km)/Translational Invariance (Cross Shelf)	2
8/26	3A Site B	Offshore Run over Canyon, South-North, Repeat, Variable Depth OMAS	1
8/26	3B Site B	Shallow Water Circle/Coherence Run; R=5-7.5 km (increased ping rate)	1
8/27	4	3D-Bathy Canyon Run	1
8/28	5 Site A	110 m Isobath Run; Along/cross shelf	1
8/29	6 Site A	24 hr Coverage, Circle Track, R=7 km, Temporal Variability	3

Overview of TL Runs



OMAS Event 1; ~125m Isobath Baseline

Along and Cross Shelf



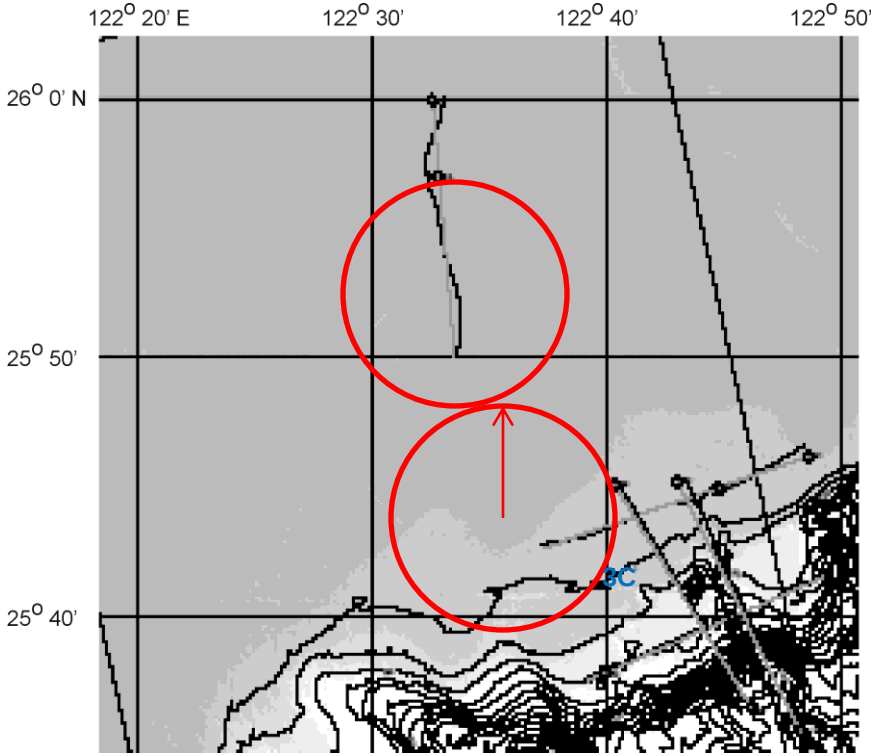
RED: OMAS Tracks

BLUE: R/V Positions

NOT TO SCALE

- 2-A. Starting Point: 25° 42.83', 122° 36.78'
  - Start OMAS run at Western end of 130m isobath traverse leg
  - Deploy Spar Buoy #1 with 2 Tethered sonobuoys
  - Launch OMAS
- 2-B. Move OR1 SW 1 km:
  - Move SW 1 km to **25° 42.45' N, 122° 36.35' E**
  - Launch Spar Buoy #2 with 1 Tethered sonobuoy
- 2-C. Move NNE 2 km:
  - Move NNE 2 km to **25° 43.45' N, 122° 36.81' E**
  - As conditions, traffic permits, secure main engines, drift
- OMAS starts event along 130m isobath for 15 km, then returns to start point, then heads ESE across shelf, opening range until end-of-run.

OMAS Event 2; 2 Circles (R=7 km) Centered at "centroid", Translational Invariance



RED: OMAS Tracks

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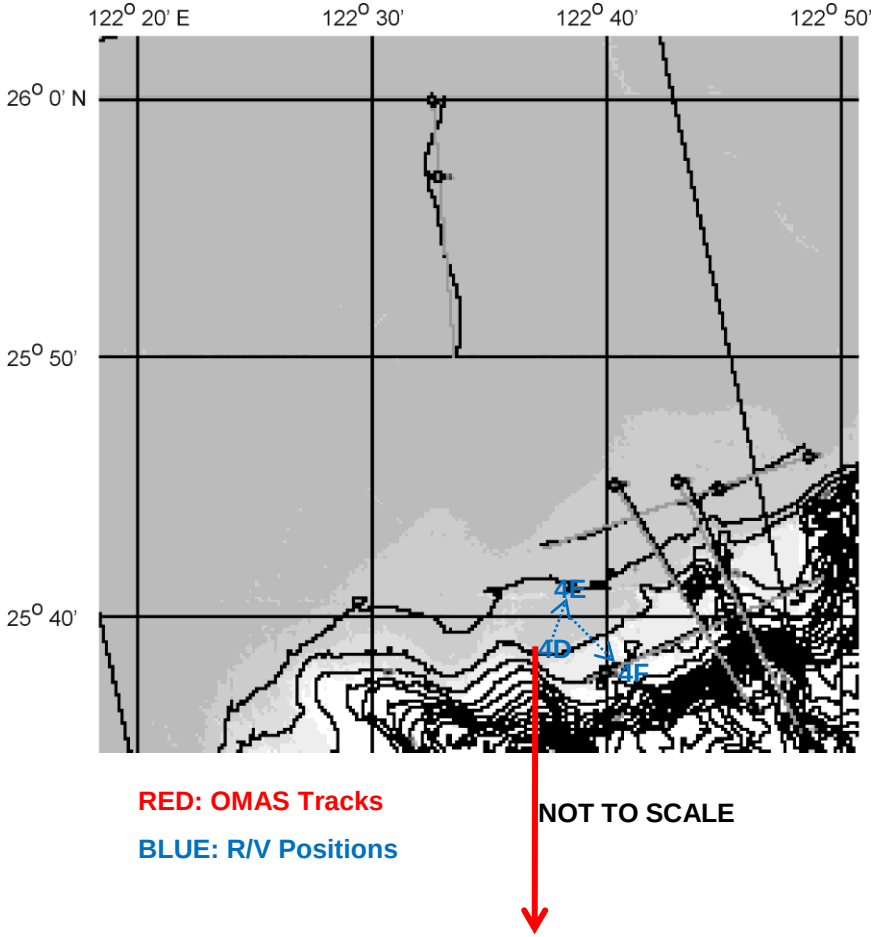
NOT TO SCALE

- 2-A. Starting Point: 25° 42.83' N, 122° 36.78' E
  - Start OMAS1 run at Western end of 130m isobath traverse leg
  - Deploy Spar Buoy #1 with 2 Tethered sonobuoys
  - Launch OMAS
- 2-B. Move to 2nd Circle Center (25° 49.81' N, 122° 33.56' E)
  - Move NE 1 km to **25° 50.2' N, 122° 34' E**
  - Launch Spar Buoy #2 with 1 Tethered sonobuoy
- 2-C. Move SE 2 km:
  - Move SE 2 km to **25° 49.43' N, 122° 34.84' E**
  - As conditions, traffic permits, secure main engines, drift
- Simultaneous OMAS1 and OMAS 2 units to evaluate isotropy and translational invariance. 2 Sonobuoys located near center of OMAS1 and 1 sonobuoy located near center of OMAS2

OMAS Event 3A; Offshore Run over Canyon

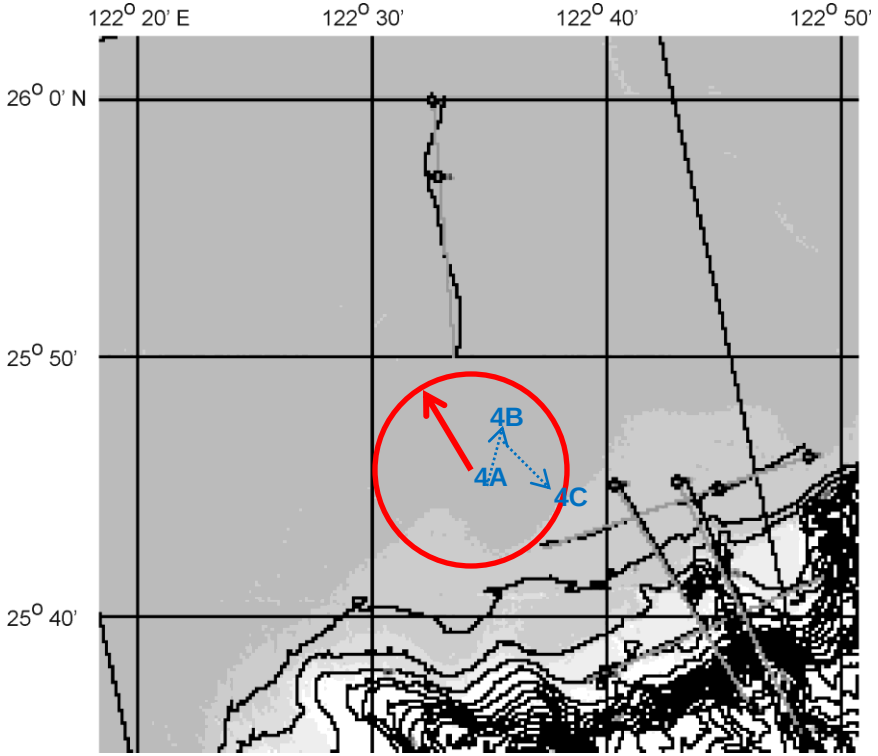
Varying OMAS Depths from 50 to 200 m



- 4-D. Starting Point: 25° 43.8' N, 122° 36' E
  - Start OMAS run 7.5 km S of Western end of 130m isobath traverse leg
  - Deploy Spar Buoy #1 with 2 Tethered sonobuoys
  - Launch OMAS
- 4-E. Move OR1 NE 1 km:
  - Move NE 1 km to **25° 44.18' N, 122° 36.43' E**
  - Launch Spar Buoy #2 with 1 Tethered sonobuoy
- 4-F. Move SE 2 km:
  - Move SE 2 km to **25° 43.42' N, 122° 37.27' E**
  - As conditions, traffic permits, secure main engines, drift
- OMAS unit runs due south over SHRU for 15 km, varying depth during track, then repeats to the south while varying depth, then repeats to the south again until scuttling.

OMAS Event 3B; Spatial Coherence

Constant Range (app. 7.5km) , Varying Bearing Over Constant Depth



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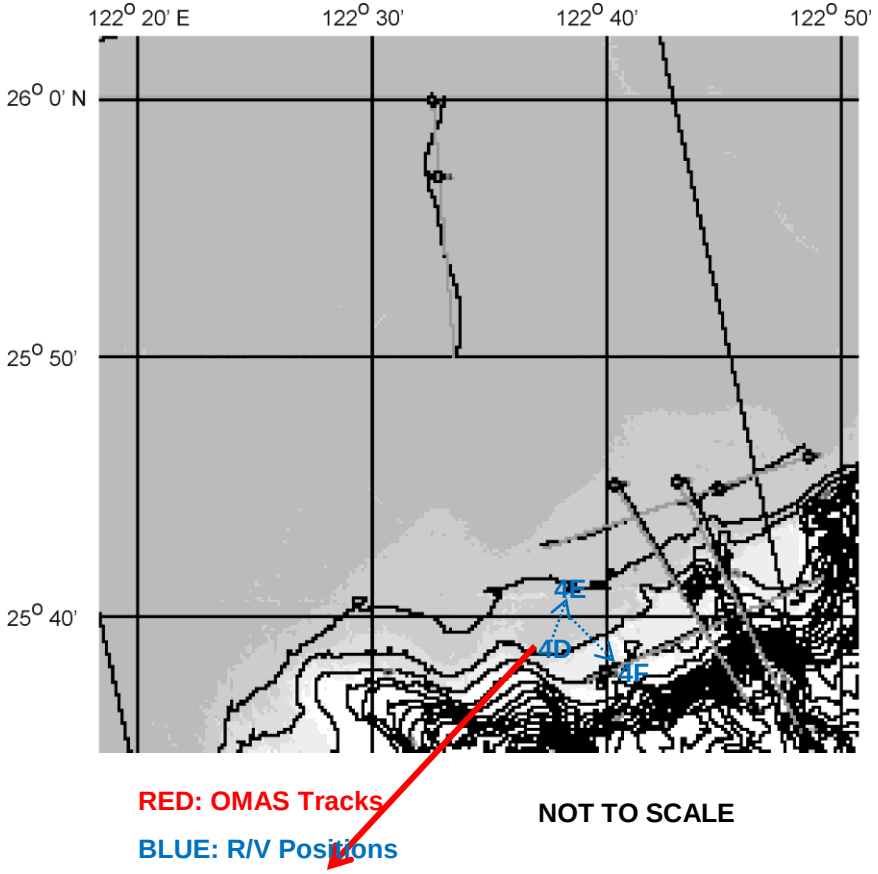
NOT TO SCALE

- 4-A. Starting Point: 25° 45' N, 122° 35' E
  - Start OMAS run 7.5 km NW of 130m isobath traverse leg
  - Deploy Spar Buoy #1 with 2 Tethered sonobuoys
  - Launch OMAS
- 4-B. Move OR1 NE 1 km:
  - Move NE 1 km to **25° 45.35' N, 122° 35.35' E**
  - Launch Spar Buoy #2 with 1 Tethered sonobuoy
- 4-C. Move SE 2 km:
  - Move SE 2 km to **25° 44.5' N, 122° 35.9' E**
  - As conditions, traffic permits, secure main engines, drift
- OMAS unit starts event running a radial leg out to 7.5 km, then commences CW circle with constant range about start point. OMAS programmed to ping at maximum rate to increase sample size.

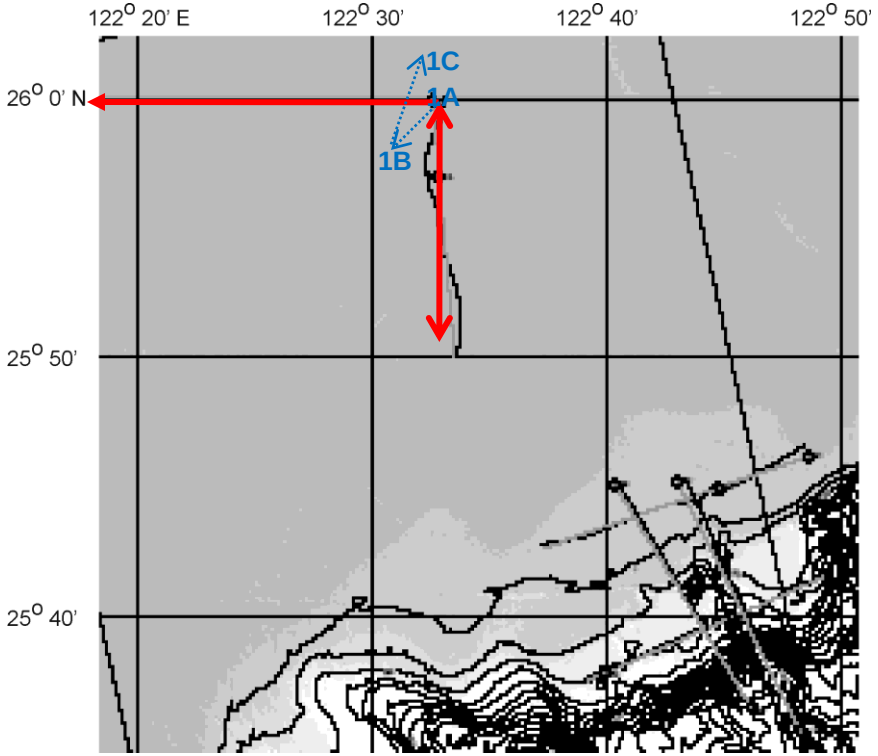
OMAS Event 4; 3D Bathymetry Effects

Constant Range (app. 7.5km) , Varying Bearing Over Varying Bottom (Canyon)



- 4-D. Starting Point: 25° 42.11' N, 122° 44.29' E
  - Start OMAS run 7.5 km S of Western end of 130m isobath traverse leg
  - Deploy Spar Buoy #1 with 2 Tethered sonobuoys
  - Launch OMAS
- 4-E. Move OR1 NE 1 km:
  - Move NE 1 km to **25° 42.50' N, 122° 44.71' E**
  - Launch Spar Buoy #2 with 1 Tethered sonobuoy
- 4-F. Move SE 2 km:
  - Move SE 2 km to **25° 41.73' N, 122° 45.56' E**
  - As conditions, traffic permits, secure main engines, drift
- OMAS unit starts event running a radial leg out to 15 km over the canyon, then repeats back on track .

OMAS Event 5 (Site A); (repeat Pilot 08 run with cross-shelf leg)



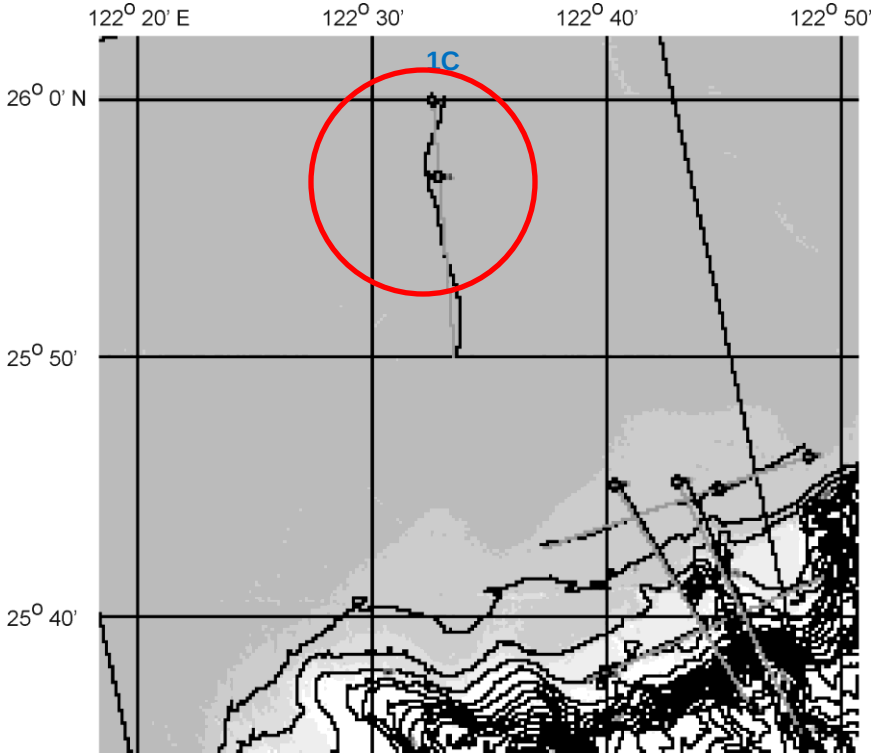
RED: OMAS Tracks

BLUE: R/V Positions

NOT TO SCALE

- 1-A. Starting Point: 25° 59.34' N, 122° 31.55' E
  - Repeat of Pilot '08, with a N/S leg added
  - Deploy Spar Buoy #1 with 2 Tethered sonobuoys
  - Launch OMAS
- 1-B. Move OR1 SW 1 km:
  - Move SW 1 km to **25° 58.96' N, 122° 31.13' E**
  - Launch Spar Buoy #2 with 1 Tethered sonobuoy
- 1-C. Move OR1 NE 2 km:
  - Move NNE 2 km to **25° 59.72' N, 122° 31.98' E**
  - As conditions, traffic permits, secure main engines, drift
- OMAS starts event with a South leg of app. 15 km, then returns to start point, and heads west, opening range until end-of-run.

OMAS Event 5 (Site A); Temporal Variability, 24 hrs Circle, R=7 km, Using 3 OMAS (8 hrs per unit)



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NOT TO SCALE

- 1-A. Starting Point: 25° 59.34' N, 122° 31.55' E
  - Deploy Spar Buoy #1 with 2 Tethered sonobuoys
  - Launch OMAS
- 1-B. Move OR1 SW 1 km:
  - Move SW 1 km to **25° 58.96' N, 122° 31.13' E**
  - Launch Spar Buoy #2 with 1 Tethered sonobuoy
- 1-C. Move OR1 NE 2 km:
  - Move NNE 2 km to **25° 59.72' N, 122° 31.98' E**
  - As conditions, traffic permits, secure main engines, drift
- 3 OMAS units to evaluate temporal variability