HOKKAIDO UNIVERSITY

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| Title | 7. The "Oshoro Maru" Cruise 235 to the waters east of Honshu in October 2011 |
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7

# THE " OSHORO MARU " CRUISE 235 TO THE WATERS EAST OF HONSHU

# IN OCTOBER 2011

1. Cruise Itinerary

| | |
|---|---|
| Cruise 235 | |
| Departure from Hakodate | Oct. 2, 2011 |
| Start hydrographic research (OS11333) | 3 |
| Arrival at Miyako | 3 |
| Departure from Miyako | 3 |
| Finish hydrographic research (OS11353) | 6 |
| Return to Hakodate | 7 |

Total coverage 859.3miles 6 days at sea.

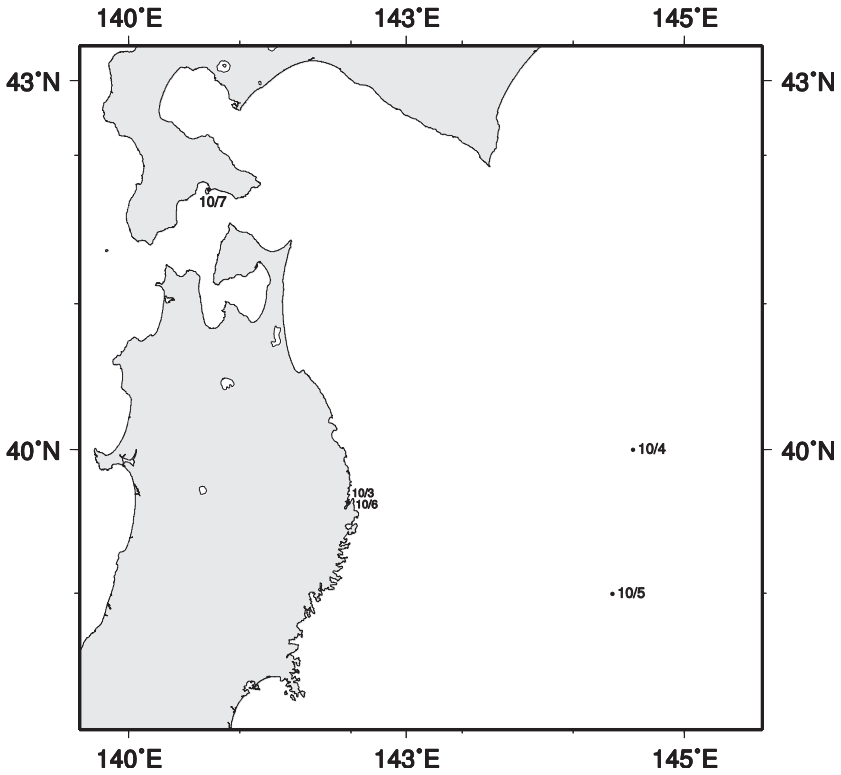


Figure 1. Noon position

2. Vessel Personnel

| | | | |
|---|---|---|---|
| Captain: | | Associate Professor | Shogo Takagi |
| Crew: | Chief Officer | Associate Professor | Keiichiro Sakaoka |
| | Chief Second Officer | Instructor | Naoki Hoshi |
| | Jr. Second Officer | Technical official | Takuzo Abe |
| | Third Officer | Technical official | Maki Ohwada |
| | Science Officer | Technical official | Keiri Imai |
| | Chief Engineer | Instructor | Jyunichi Kimura |
| | And 23 men | | |

Cruise 235

There are no researchers in this Cruise.

3. Items of Research

Hydrographic observations: Fig. 2 Table 1,2
Water samplings by Niskin bottles:

## 4. Data on Temperature, Salinity and Computed Dynamic Depth Anomaly

Hydrographic work on deck and the data processing were made by the deck officers, science officer, crews, research staff and cadets of the *"Oshoromaru"*. Temperature and salinity were measured by CTD (Seabird SBE-9Plus and SBE-19Plus). Dynamic computations were made using a desk-top computer aboard the *"Oshoromaru"*. Water and Plankton sampling were also carried out at almost hydrographic stations.

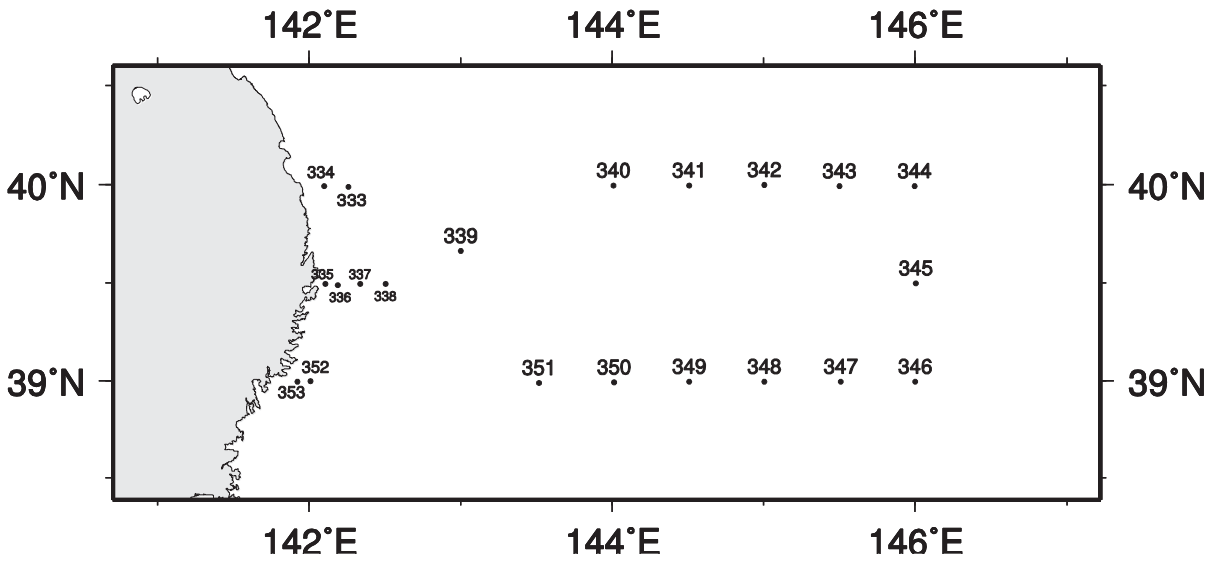


Figure 2. Oceanographic stations

Table 1. List of Oceanographic Station

| Station | Lat.(*) | Long.(*) | Date | S.M.T | T.Z. | Depth | COL. | TR. | S.S.T. | WR. | Remark |
|---|---|---|---|---|---|---|---|---|---|---|---|
| OS11333 | 39-59.7N | 142-15.3E | 10/2 | 1936 | 9 | 244 | - | - | 18.2 | bc | 9Plus-0769 |
| OS11334 | 39-59.9N | 142-05.6E | 10/2 | 2051 | 9 | 123 | - | - | 18.3 | bc | 9Plus-0769 |
| OS11335 | 39-29.9N | 142-06.2E | 10/3 | 0727 | 9 | 147 | - | - | 19.1 | bc | 9Plus-0769 |
| OS11336 | 39-29.7N | 142-11.0E | 10/3 | 0812 | 9 | 236 | - | - | 18.9 | bc | 9Plus-0769 |
| OS11337 | 39-30.0N | 142-20.0E | 10/3 | 0917 | 9 | 690 | - | - | 17.6 | bc | 9Plus-0769 |
| OS11338 | 39-30.0N | 142-30.0E | 10/3 | 1416 | 9 | 970 | - | - | 16.7 | bc | 9Plus-0769 |
| OS11339 | 39-40.0N | 142-59.6E | 10/3 | 1722 | 9 | 1539 | - | - | 15.4 | bc | 9Plus-0769 |
| OS11340 | 40-00.0N | 144-00.1E | 10/3 | 2337 | 9 | 4280 | 4 | 19.6 | 14.1 | bc | 9Plus-0769 |
| OS11341 | 40-00.0N | 144-30.0E | 10/4 | 0217 | 9 | 7000 | 3 | 10.9 | 15.3 | bc | 9Plus-0769 |
| OS11342 | 40-00.2N | 144-59.9E | 10/4 | 0450 | 9 | 5591 | 3 | 12.3 | 17.5 | bc | 9Plus-0769 |
| OS11343 | 39-59.8N | 145-29.7E | 10/4 | 0744 | 9 | 5170 | - | - | 17.5 | bc | 9Plus-0769 |
| OS11344 | 39-59.9N | 145-59.4E | 10/4 | 1016 | 9 | 5115 | - | - | 16 | bc | 9Plus-0769 |
| OS11345 | 39-30.1N | 145-59.9E | 10/4 | 1337 | 9 | 5185 | - | - | 21.3 | bc | 9Plus-0769 |
| OS11346 | 39-00.1N | 145-59.7E | 10/4 | 1707 | 9 | 5268 | - | - | 22.6 | bc | 9Plus-0769 |
| OS11347 | 39-00.1N | 145-30.1E | 10/4 | 1953 | 9 | 5260 | - | - | 18.6 | bc | 9Plus-0769 |
| OS11348 | 39-00.0N | 144-60.0E | 10/4 | 2241 | 9 | 5520 | 3 | 12.6 | 17.6 | c | 9Plus-0769 |
| OS11349 | 38-59.9N | 144-30.2E | 10/5 | 0130 | 9 | 6240 | 3 | 14.2 | 17.5 | c | 9Plus-0769 |
| OS11350 | 38-59.7N | 144-00.3E | 10/5 | 0438 | 9 | 5728 | 3 | 13.5 | 18.5 | c | 9Plus-0769 |
| OS11351 | 38-59.7N | 143-30.7E | 10/5 | 0809 | 9 | 2500 | - | - | 17.4 | c | 9Plus-0769 |
| OS11352 | 39-00.2N | 142-00.2E | 10/5 | 1829 | 9 | 201 | - | - | 19.8 | r | 9Plus-0769 |
| OS11353 | 39-00.0N | 141-55.0E | 10/5 | 1926 | 9 | 138 | - | - | 19.7 | r | 9Plus-0769 |

(*) : Fixed position by Global Positioning System

Table 2. Oceanographic data

Station OS11333
Latitude 39-59.7 N
Longitude 142-15.3 E
Depth(m) 244

| Press. | Temp. | Sal. | SIG-T |
|---|---|---|---|
| 5 | 18.338 | 33.537 | 24.069 |
| 10 | 18.341 | 33.538 | 24.069 |
| 20 | 18.344 | 33.537 | 24.068 |
| 30 | 18.350 | 33.538 | 24.066 |
| 40 | 18.350 | 33.538 | 24.066 |
| 50 | 16.523 | 33.510 | 24.482 |
| 75 | 6.002 | 33.390 | 26.281 |
| 100 | 4.666 | 33.425 | 26.464 |
| 125 | 4.237 | 33.460 | 26.537 |
| 150 | 4.034 | 33.450 | 26.549 |
| 175 | 2.813 | 33.354 | 26.588 |
| 200 | 2.713 | 33.384 | 26.620 |

Station OS11334
Latitude 39-59.9 N
Longitude 142-05.6 E
Depth(m) 123

| Press. | Temp. | Sal. | SIG-T |
|---|---|---|---|
| 5 | 18.550 | 33.602 | 24.066 |
| 10 | 18.549 | 33.602 | 24.066 |
| 20 | 18.553 | 33.602 | 24.065 |
| 30 | 18.543 | 33.602 | 24.068 |
| 40 | 18.520 | 33.604 | 24.075 |
| 50 | 15.219 | 33.775 | 24.979 |
| 75 | 12.695 | 34.137 | 25.785 |
| 100 | 11.377 | 33.918 | 25.865 |

Station OS11335
Latitude 39-29.9 N
Longitude 142-06.2 E
Depth(m) 147

| Press. | Temp. | Sal. | SIG-T |
|---|---|---|---|
| 5 | 19.137 | 33.436 | 23.792 |
| 10 | 19.140 | 33.437 | 23.791 |
| 20 | 19.117 | 33.477 | 23.828 |
| 30 | 18.966 | 33.492 | 23.877 |
| 40 | 18.825 | 33.493 | 23.914 |
| 50 | 18.305 | 33.500 | 24.049 |
| 75 | 17.250 | 33.569 | 24.357 |
| 100 | 13.674 | 33.723 | 25.268 |

Station OS11336
Latitude 39-29.7 N
Longitude 142-11.0 E
Depth(m) 236

| Press. | Temp. | Sal. | SIG-T |
|---|---|---|---|
| 5 | 18.959 | 33.584 | 23.950 |
| 10 | 18.965 | 33.584 | 23.948 |
| 20 | 18.902 | 33.574 | 23.956 |
| 30 | 18.855 | 33.565 | 23.962 |
| 40 | 18.751 | 33.540 | 23.968 |
| 50 | 15.948 | 33.882 | 24.899 |
| 75 | 12.192 | 33.734 | 25.569 |
| 100 | 8.101 | 33.437 | 26.031 |
| 125 | 7.349 | 33.467 | 26.163 |
| 150 | 7.254 | 33.471 | 26.180 |
| 175 | 7.306 | 33.559 | 26.242 |
| 200 | 7.089 | 33.548 | 26.263 |

Station OS11337
Latitude 39-30.0 N
Longitude 142-20.0 E
Depth(m) 690

| Press. | Temp. | Sal. | SIG-T |
|---|---|---|---|
| 5 | 17.701 | 33.255 | 24.009 |
| 10 | 17.704 | 33.255 | 24.007 |
| 20 | 17.708 | 33.254 | 24.006 |
| 30 | 17.708 | 33.256 | 24.008 |
| 40 | 15.400 | 33.058 | 24.388 |
| 50 | 11.617 | 32.941 | 25.061 |
| 75 | 7.254 | 33.524 | 26.217 |
| 100 | 7.193 | 33.713 | 26.379 |
| 125 | 5.892 | 33.642 | 26.493 |
| 150 | 3.776 | 33.457 | 26.581 |
| 175 | 3.996 | 33.543 | 26.627 |
| 200 | 3.076 | 33.489 | 26.672 |
| 250 | 2.471 | 33.498 | 26.731 |
| 300 | 2.268 | 33.536 | 26.778 |
| 400 | 3.118 | 33.767 | 26.890 |
| 500 | 3.478 | 33.979 | 27.026 |
| 600 | 3.505 | 34.089 | 27.110 |

Station OS11338
Latitude 39-30.0 N
Longitude 142-30.0 E
Depth(m) 970

| Press. | Temp. | Sal. | SIG-T |
|---|---|---|---|
| 5 | 16.749 | 33.104 | 24.118 |
| 10 | 16.750 | 33.103 | 24.117 |
| 20 | 14.798 | 33.069 | 24.527 |
| 30 | 10.835 | 33.158 | 25.370 |
| 40 | 8.611 | 33.520 | 26.019 |
| 50 | 9.919 | 33.991 | 26.178 |
| 75 | 7.698 | 33.752 | 26.338 |
| 100 | 6.126 | 33.593 | 26.425 |
| 125 | 4.504 | 33.454 | 26.504 |
| 150 | 4.220 | 33.544 | 26.605 |
| 175 | 3.652 | 33.536 | 26.656 |
| 200 | 4.075 | 33.676 | 26.726 |
| 250 | 3.194 | 33.647 | 26.787 |
| 300 | 3.142 | 33.736 | 26.863 |
| 400 | 3.972 | 33.988 | 26.984 |
| 500 | 3.397 | 34.041 | 27.083 |
| 600 | 3.425 | 34.150 | 27.167 |
| 700 | 3.177 | 34.231 | 27.255 |
| 800 | 3.022 | 34.304 | 27.327 |
| 900 | 2.925 | 34.345 | 27.369 |

Station OS11339
Latitude 39-40.0 N
Longitude 142-59.6 E
Depth(m) 1539

| Press. | Temp. | Sal. | SIG-T |
|---|---|---|---|
| 5 | 15.465 | 33.019 | 24.343 |
| 10 | 15.452 | 33.020 | 24.347 |
| 20 | 15.367 | 33.032 | 24.376 |
| 30 | 13.175 | 33.117 | 24.900 |
| 40 | 8.939 | 33.077 | 25.622 |
| 50 | 5.279 | 33.247 | 26.253 |
| 75 | 4.428 | 33.279 | 26.373 |
| 100 | 3.553 | 33.347 | 26.515 |
| 125 | 2.680 | 33.345 | 26.592 |
| 150 | 2.826 | 33.456 | 26.668 |
| 175 | 2.576 | 33.495 | 26.721 |
| 200 | 2.522 | 33.546 | 26.766 |
| 250 | 2.718 | 33.653 | 26.835 |
| 300 | 3.026 | 33.757 | 26.890 |
| 400 | 3.422 | 33.963 | 27.018 |
| 500 | 3.464 | 34.093 | 27.118 |
| 600 | 3.231 | 34.172 | 27.203 |
| 700 | 3.392 | 34.285 | 27.278 |
| 800 | 3.037 | 34.316 | 27.336 |
| 900 | 2.903 | 34.359 | 27.382 |
| 1000 | 2.754 | 34.397 | 27.425 |

Station OS11340
Latitude 40-00.0 N
Longitude 144-00.1 E
Depth(m) 4280

| Press. | Temp. | Sal. | SIG-T |
|---|---|---|---|
| 5 | 15.061 | 33.340 | 24.679 |
| 10 | 15.056 | 33.340 | 24.680 |
| 20 | 15.045 | 33.342 | 24.684 |
| 30 | 11.977 | 33.674 | 25.564 |
| 40 | 10.198 | 33.769 | 25.957 |
| 50 | 9.165 | 33.754 | 26.116 |
| 75 | 8.316 | 33.845 | 26.319 |
| 100 | 6.998 | 33.722 | 26.413 |
| 125 | 5.645 | 33.609 | 26.497 |
| 150 | 4.077 | 33.487 | 26.575 |
| 175 | 3.146 | 33.453 | 26.637 |
| 200 | 2.972 | 33.493 | 26.684 |
| 250 | 2.927 | 33.576 | 26.755 |
| 300 | 3.225 | 33.716 | 26.840 |
| 400 | 3.546 | 33.916 | 26.969 |
| 500 | 3.443 | 34.035 | 27.074 |

Station OS11341
Latitude 40-00.0 N
Longitude 144-30.0 E
Depth(m) 7000

| Press. | Temp. | Sal. | SIG-T |
|---|---|---|---|
| 5 | 15.164 | 33.224 | 24.567 |
| 10 | 15.129 | 33.225 | 24.576 |
| 20 | 15.102 | 33.227 | 24.583 |
| 30 | 14.941 | 33.240 | 24.628 |
| 40 | 11.735 | 33.325 | 25.338 |
| 50 | 9.872 | 33.541 | 25.834 |
| 75 | 7.237 | 33.666 | 26.336 |
| 100 | 6.058 | 33.610 | 26.447 |
| 125 | 5.613 | 33.648 | 26.532 |
| 150 | 3.397 | 33.437 | 26.601 |
| 175 | 3.272 | 33.467 | 26.637 |
| 200 | 3.111 | 33.500 | 26.678 |
| 250 | 3.337 | 33.647 | 26.774 |
| 300 | 3.916 | 33.822 | 26.857 |
| 400 | 4.063 | 33.986 | 26.973 |
| 500 | 3.927 | 34.092 | 27.071 |

Station OS11342
Latitude 40-00.2 N
Longitude 144-59.9 E
Depth(m) 5591

| Press. | Temp. | Sal. | SIG-T |
|---|---|---|---|
| 5 | 17.432 | 33.022 | 23.894 |
| 10 | 17.417 | 33.021 | 23.898 |
| 20 | 17.353 | 33.019 | 23.911 |
| 30 | 12.276 | 33.219 | 25.154 |
| 40 | 9.088 | 33.327 | 25.794 |
| 50 | 5.862 | 33.303 | 26.229 |
| 75 | 4.105 | 33.279 | 26.407 |
| 100 | 3.178 | 33.303 | 26.515 |
| 125 | 3.827 | 33.464 | 26.582 |
| 150 | 3.358 | 33.486 | 26.644 |
| 175 | 4.357 | 33.687 | 26.705 |
| 200 | 3.882 | 33.684 | 26.751 |
| 250 | 3.869 | 33.763 | 26.815 |
| 300 | 3.450 | 33.784 | 26.873 |
| 400 | 3.435 | 33.922 | 26.984 |
| 500 | 3.713 | 34.094 | 27.094 |

Station OS11343
Latitude 39-59.8 N
Longitude 145-29.7 E
Depth(m) 5170

| Press. | Temp. | Sal. | SIG-T |
|---|---|---|---|
| 5 | 17.522 | 33.144 | 23.966 |
| 10 | 17.519 | 33.145 | 23.968 |
| 20 | 17.471 | 33.173 | 24.001 |
| 30 | 13.229 | 33.325 | 25.050 |
| 40 | 9.995 | 33.389 | 25.695 |
| 50 | 6.513 | 33.350 | 26.183 |
| 75 | 5.476 | 33.480 | 26.416 |
| 100 | 4.899 | 33.505 | 26.501 |
| 125 | 4.267 | 33.506 | 26.570 |
| 150 | 4.278 | 33.599 | 26.643 |
| 175 | 3.951 | 33.619 | 26.693 |
| 200 | 3.390 | 33.606 | 26.737 |
| 250 | 3.594 | 33.725 | 26.812 |
| 300 | 3.486 | 33.791 | 26.875 |
| 400 | 3.831 | 33.983 | 26.994 |
| 500 | 3.686 | 34.089 | 27.093 |

Station OS11344
Latitude 39-59.9 N
Longitude 145-59.4 E
Depth(m) 5115

| Press. | Temp. | Sal. | SIG-T |
|---|---|---|---|
| 5 | 15.766 | 33.230 | 24.439 |
| 10 | 15.785 | 33.236 | 24.439 |
| 20 | 15.820 | 33.250 | 24.443 |
| 30 | 12.327 | 33.149 | 25.090 |
| 40 | 9.752 | 33.384 | 25.732 |
| 50 | 7.725 | 33.537 | 26.165 |
| 75 | 5.857 | 33.497 | 26.383 |
| 100 | 4.823 | 33.456 | 26.471 |
| 125 | 3.632 | 33.380 | 26.534 |
| 150 | 3.624 | 33.445 | 26.586 |
| 175 | 3.912 | 33.562 | 26.652 |
| 200 | 3.309 | 33.546 | 26.696 |
| 250 | 2.766 | 33.589 | 26.779 |
| 300 | 3.588 | 33.793 | 26.867 |
| 400 | 3.427 | 33.921 | 26.984 |
| 500 | 3.918 | 34.112 | 27.088 |

Station OS11345
Latitude 39-30.1 N
Longitude 145-59.9 E
Depth(m) 5185

| Press. | Temp. | Sal. | SIG-T |
|---|---|---|---|
| 5 | 21.472 | 34.026 | 23.624 |
| 10 | 21.473 | 34.026 | 23.624 |
| 20 | 21.470 | 34.026 | 23.624 |
| 30 | 21.466 | 34.026 | 23.626 |
| 40 | 16.871 | 34.374 | 25.064 |
| 50 | 14.585 | 34.374 | 25.579 |
| 75 | 12.045 | 34.236 | 25.987 |
| 100 | 10.924 | 34.208 | 26.172 |
| 125 | 9.978 | 34.107 | 26.258 |
| 150 | 8.961 | 34.031 | 26.366 |
| 175 | 7.783 | 33.920 | 26.457 |
| 200 | 7.242 | 33.928 | 26.541 |
| 250 | 5.421 | 33.810 | 26.683 |
| 300 | 5.615 | 33.938 | 26.761 |
| 400 | 4.593 | 34.015 | 26.940 |
| 500 | 3.875 | 34.062 | 27.052 |

Station OS11346
Latitude 39-00.1 N
Longitude 145-59.7 E
Depth(m) 5268

| Press. | Temp. | Sal. | SIG-T |
|---|---|---|---|
| 5 | 21.431 | 33.844 | 23.497 |
| 10 | 21.439 | 33.845 | 23.495 |
| 20 | 21.444 | 33.844 | 23.493 |
| 30 | 21.413 | 33.844 | 23.502 |
| 40 | 15.917 | 34.450 | 25.344 |
| 50 | 15.025 | 34.462 | 25.551 |
| 75 | 13.083 | 34.409 | 25.918 |
| 100 | 11.938 | 34.331 | 26.081 |
| 125 | 9.774 | 34.088 | 26.278 |
| 150 | 8.955 | 33.992 | 26.336 |
| 175 | 8.024 | 33.903 | 26.408 |
| 200 | 7.635 | 33.919 | 26.478 |
| 250 | 6.424 | 33.908 | 26.636 |
| 300 | 5.676 | 33.936 | 26.752 |
| 400 | 4.954 | 34.011 | 26.896 |
| 500 | 4.480 | 34.101 | 27.020 |

Station OS11347
Latitude 39-00.1 N
Longitude 145-30.1 E
Depth(m) 5260

| Press. | Temp. | Sal. | SIG-T |
|---|---|---|---|
| 5 | 18.156 | 33.213 | 23.866 |
| 10 | 18.173 | 33.214 | 23.863 |
| 20 | 18.174 | 33.213 | 23.862 |
| 30 | 18.099 | 33.490 | 24.092 |
| 40 | 14.323 | 33.785 | 25.180 |
| 50 | 13.082 | 33.935 | 25.551 |
| 75 | 12.094 | 34.076 | 25.853 |
| 100 | 8.338 | 33.594 | 26.120 |
| 125 | 9.498 | 34.051 | 26.295 |
| 150 | 7.956 | 33.851 | 26.378 |
| 175 | 5.869 | 33.597 | 26.460 |
| 200 | 3.657 | 33.408 | 26.554 |
| 250 | 4.115 | 33.600 | 26.661 |
| 300 | 3.048 | 33.567 | 26.737 |
| 400 | 3.176 | 33.761 | 26.880 |
| 500 | 3.913 | 34.024 | 27.019 |

Station OS11348
Latitude 39-00.0 N
Longitude 144-60.0 E
Depth(m) 5520

| Press. | Temp. | Sal. | SIG-T |
|---|---|---|---|
| 5 | 17.555 | 33.119 | 23.940 |
| 10 | 17.556 | 33.121 | 23.940 |
| 20 | 17.492 | 33.104 | 23.943 |
| 30 | 12.432 | 33.688 | 25.488 |
| 40 | 11.888 | 33.805 | 25.682 |
| 50 | 11.907 | 34.006 | 25.835 |
| 75 | 10.021 | 34.004 | 26.170 |
| 100 | 9.299 | 33.931 | 26.233 |
| 125 | 7.927 | 33.756 | 26.307 |
| 150 | 7.113 | 33.765 | 26.430 |
| 175 | 6.469 | 33.749 | 26.504 |
| 200 | 5.366 | 33.657 | 26.568 |
| 250 | 4.786 | 33.714 | 26.680 |
| 300 | 3.784 | 33.692 | 26.767 |
| 400 | 3.898 | 33.871 | 26.898 |
| 500 | 3.829 | 33.992 | 27.002 |

Station OS11349
Latitude 38-59.9 N
Longitude 144-30.2 E
Depth(m) 6240

| Press. | Temp. | Sal. | SIG-T |
|---|---|---|---|
| 5 | 17.169 | 33.013 | 23.950 |
| 10 | 17.160 | 33.011 | 23.951 |
| 20 | 17.138 | 33.016 | 23.959 |
| 30 | 17.094 | 33.051 | 23.997 |
| 40 | 11.595 | 33.251 | 25.306 |
| 50 | 8.988 | 33.410 | 25.875 |
| 75 | 6.978 | 33.559 | 26.287 |
| 100 | 5.704 | 33.503 | 26.406 |
| 125 | 5.059 | 33.548 | 26.517 |
| 150 | 3.699 | 33.455 | 26.587 |
| 175 | 3.168 | 33.435 | 26.621 |
| 200 | 2.605 | 33.434 | 26.669 |
| 250 | 2.733 | 33.533 | 26.737 |
| 300 | 2.847 | 33.610 | 26.789 |
| 400 | 2.930 | 33.784 | 26.921 |
| 500 | 3.566 | 33.999 | 27.033 |

Station OS11350
Latitude 38-59.7 N
Longitude 144-00.3 E
Depth(m) 5728

| Press. | Temp. | Sal. | SIG-T |
|---|---|---|---|
| 5 | 18.400 | 33.397 | 23.947 |
| 10 | 18.401 | 33.397 | 23.946 |
| 20 | 18.385 | 33.397 | 23.950 |
| 30 | 18.209 | 33.359 | 23.964 |
| 40 | 16.358 | 33.072 | 24.184 |
| 50 | 13.070 | 32.952 | 24.793 |
| 75 | 9.894 | 33.536 | 25.827 |
| 100 | 8.675 | 33.773 | 26.208 |
| 125 | 6.485 | 33.585 | 26.373 |
| 150 | 2.358 | 33.188 | 26.493 |
| 175 | 2.029 | 33.235 | 26.555 |
| 200 | 3.033 | 33.425 | 26.625 |
| 250 | 2.748 | 33.540 | 26.741 |
| 300 | 2.807 | 33.601 | 26.786 |
| 400 | 3.249 | 33.834 | 26.931 |
| 500 | 3.423 | 33.971 | 27.025 |

Station OS11351
Latitude 38-59.7 N
Longitude 143-30.7 E
Depth(m) 2500

| Press. | Temp. | Sal. | SIG-T |
|---|---|---|---|
| 5 | 17.461 | 33.189 | 24.016 |
| 10 | 17.461 | 33.189 | 24.015 |
| 20 | 17.436 | 33.185 | 24.019 |
| 30 | 17.547 | 33.253 | 24.044 |
| 40 | 17.070 | 33.295 | 24.189 |
| 50 | 11.538 | 33.115 | 25.211 |
| 75 | 7.535 | 33.484 | 26.150 |
| 100 | 6.785 | 33.665 | 26.396 |
| 125 | 4.547 | 33.469 | 26.512 |
| 150 | 3.758 | 33.436 | 26.566 |
| 175 | 3.365 | 33.453 | 26.617 |
| 200 | 2.804 | 33.456 | 26.670 |
| 250 | 2.352 | 33.470 | 26.719 |
| 300 | 4.013 | 33.759 | 26.797 |
| 400 | 3.241 | 33.795 | 26.901 |
| 500 | 3.297 | 33.921 | 26.997 |

Station OS11352
Latitude 39-00.2 N
Longitude 142-00.2 E
Depth(m) 201

| Press. | Temp. | Sal. | SIG-T |
|---|---|---|---|
| 5 | 19.756 | 33.267 | 23.504 |
| 10 | 19.766 | 33.273 | 23.506 |
| 20 | 19.831 | 33.348 | 23.546 |
| 30 | 19.839 | 33.371 | 23.561 |
| 40 | 19.711 | 33.487 | 23.683 |
| 50 | 18.046 | 33.491 | 24.105 |
| 75 | 15.021 | 33.873 | 25.098 |
| 100 | 12.438 | 33.905 | 25.655 |
| 125 | 11.079 | 33.883 | 25.891 |
| 150 | 8.874 | 33.603 | 26.044 |
| 175 | 7.612 | 33.573 | 26.210 |

Station OS11353
Latitude 39-00.0 N
Longitude 141-55.0 E
Depth(m) 138

| Press. | Temp. | Sal. | SIG-T |
|---|---|---|---|
| 5 | 19.673 | 33.223 | 23.492 |
| 10 | 19.685 | 33.232 | 23.495 |
| 20 | 19.769 | 33.335 | 23.552 |
| 30 | 19.800 | 33.348 | 23.554 |
| 40 | 19.775 | 33.406 | 23.605 |
| 50 | 18.830 | 33.713 | 24.080 |
| 75 | 15.188 | 33.938 | 25.112 |
| 100 | 11.673 | 33.960 | 25.843 |