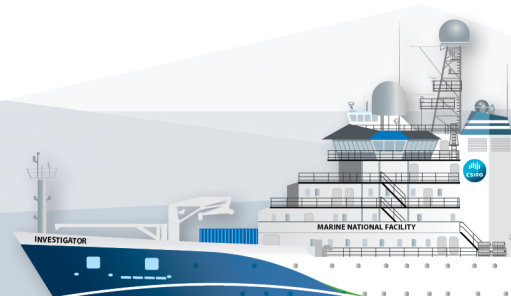


RV Investigator

ADCP Processing Report

Voyage #:	In2016_v01
Voyage title:	IMOS Moorings
Depart:	Hobart, 0900 Saturday, 21 March 2015
Return:	Hobart, 0900 Monday, 30 March 2015
Voyage Manager:	Max McGuire
Chief Scientist:	Tom Trull
Report compiled by:	Hugh Barker



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1 Summary

Data was collected during in2015_v01, a mooring retrieval and deployment voyage off SW Tasmania.

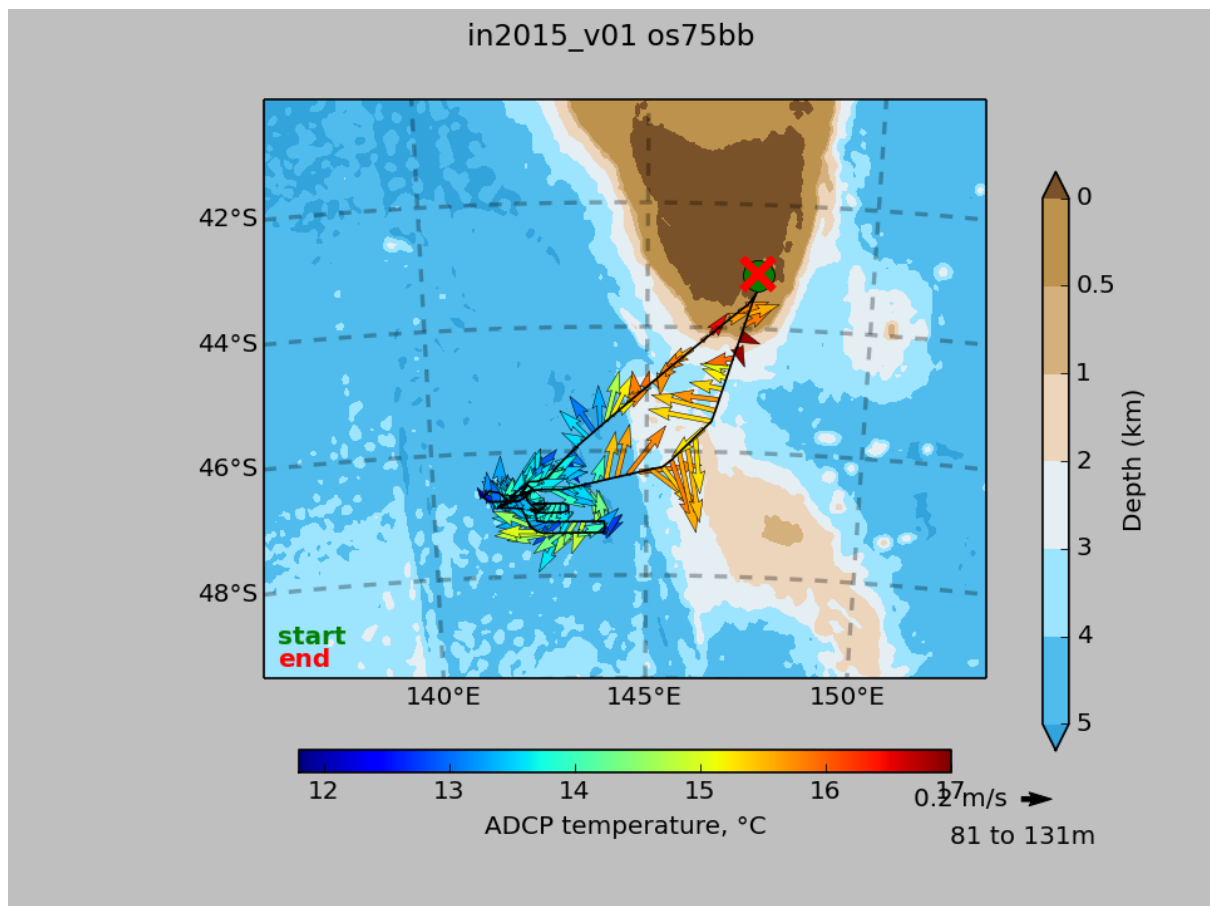
Both os75 and os150 units were operated in broadband mode.

Units were operated internally triggered, but unfortunately had bottom tracking turned on for the duration of the voyage – reducing the number of pings and therefore overall data quality and coverage.

The os150 had some issues with surface bins – the transducer was installed behind a ‘window’ on the drop keel, which caused some probable ringing. Therefore, surface coverage with the os150 is poor.

The os150 was operated with 4m bins, while the os150 was operated with 16m bins.

See computing and instrumentation voyage reports for more details about data acquisition.



2 Processing Background

The University of Hawaii's CODAS software system was used for data processing. Revision 262:6e156571631e, dated May 27 2015, was used.

See their website, http://currents.soest.hawaii.edu/docs/doc/codas_doc/index.html, for further details.

Data was processed using raw single ping (*.ENR files), along with Seapath (position, attitude) and gyro devices for position information.

3 Processing Notes

See summary.

4 Data Header

4.1 os75

```
netcdf os75bb {
dimensions:
    time = 2527 ;
    depth_cell = 50 ;
variables:
    int trajectory ;
        trajectory:standard_name = "trajectory_id" ;
    float vship(time) ;
        vship:data_max = 5.915759f ;
        vship:long_name = "Ship meridional velocity component" ;
        vship:C_format = "%9.4f" ;
        vship:data_min = -6.040325f ;
        vship:units = "meter second-1" ;
        vship:missing_value = 1.e+38f ;
    float v(time, depth_cell) ;
        v:data_max = 0.6445503f ;
        v:long_name = "Meridional velocity component" ;
        v:C_format = "%7.2f" ;
        v:data_min = -0.6898019f ;
        v:units = "meter second-1" ;
        v:missing_value = 1.e+38f ;
    float uship(time) ;
        uship:data_max = 5.905124f ;
        uship:long_name = "Ship zonal velocity component" ;
        uship:C_format = "%9.4f" ;
        uship:data_min = -5.611211f ;
        uship:units = "meter second-1" ;
        uship:missing_value = 1.e+38f ;
    float u(time, depth_cell) ;
        u:data_max = 0.6618482f ;
        u:long_name = "Zonal velocity component" ;
        u:C_format = "%7.2f" ;
        u:data_min = -0.5525565f ;
        u:units = "meter second-1" ;
        u:missing_value = 1.e+38f ;
    float tr_temp(time) ;
        tr_temp:data_max = 17.12344f ;
        tr_temp:long_name = "ADCP transducer temperature" ;
        tr_temp:C_format = "%4.1f" ;
        tr_temp:data_min = 11.66579f ;
```

```
tr_temp:units = "Celsius" ;
tr_temp:missing_value = 1.e+38f ;
double time(time) ;
time:C_format = "%12.5f" ;
time:long_name = "Decimal day" ;
time:standard_name = "time" ;
time:data_min = 79.0388888888889 ;
time:units = "days since 2015-01-01 00:00:00" ;
time:data_max = 87.8244212962963 ;
byte pg(time, depth_cell) ;
pg:long_name = "Percent good pings" ;
pg:missing_value = -1b ;
pg:data_min = 0b ;
pg:data_max = 100b ;
pg:C_format = "%d" ;
byte pflag(time, depth_cell) ;
pflag:long_name = "Editing flags" ;
pflag:missing_value = -1b ;
pflag:data_min = 0b ;
pflag:data_max = 7b ;
pflag:C_format = "%d" ;
double lon(time) ;
lon:C_format = "%9.4f" ;
lon:long_name = "Longitude" ;
lon:standard_name = "longitude" ;
lon:data_min = 141.161736111111 ;
lon:units = "degrees_east" ;
lon:missing_value = 1.e+38 ;
lon:data_max = 147.496877777778 ;
double lat(time) ;
lat:C_format = "%9.4f" ;
lat:long_name = "Latitude" ;
lat:standard_name = "latitude" ;
lat:data_min = -47.3156305555556 ;
lat:units = "degrees_north" ;
lat:missing_value = 1.e+38 ;
lat:data_max = -42.981825 ;
float heading(time) ;
heading:data_max = 179.9448f ;
heading:long_name = "Ship heading" ;
heading:C_format = "%6.1f" ;
heading:data_min = -179.9177f ;
heading:units = "degrees" ;
heading:missing_value = 1.e+38f ;
float depth(time, depth_cell) ;
depth:C_format = "%8.2f" ;
depth:positive = "down" ;
depth:long_name = "Depth" ;
depth:data_min = 31.44f ;
depth:units = "meter" ;
depth:missing_value = 1.e+38f ;
depth:data_max = 815.49f ;
short amp(time, depth_cell) ;
amp:long_name = "Received signal strength" ;
amp:missing_value = 32767s ;
```

```
        amp:data_min = 7s ;
        amp:data_max = 216s ;
        amp:C_format = "%d" ;

// global attributes:
        :featureType = "trajectoryProfile" ;
        :description = "Shipboard ADCP velocity profiles from in2015_v01
using instrument os75bb" ;
        :title = "Shipboard ADCP velocity profiles" ;
        :cruise_id = "in2015_v01" ;
        :Conventions = "COARDS" ;
        :sonar = "os75bb" ;
        :history = "Created: 2016-05-12 13:18:13" ;
        :software = "pycurrents" ;
}
```

4.2 os150

```
netcdf os150bb {
dimensions:
    time = 2527 ;
    depth_cell = 50 ;
variables:
    int trajectory ;
        trajectory:standard_name = "trajectory_id" ;
    float vship(time) ;
        vship:data_max = 5.918889f ;
        vship:long_name = "Ship meridional velocity component" ;
        vship:C_format = "%9.4f" ;
        vship:data_min = -6.03095f ;
        vship:units = "meter second-1" ;
        vship:missing_value = 1.e+38f ;
    float v(time, depth_cell) ;
        v:data_max = 2.316776f ;
        v:long_name = "Meridional velocity component" ;
        v:C_format = "%7.2f" ;
        v:data_min = -0.7582536f ;
        v:units = "meter second-1" ;
        v:missing_value = 1.e+38f ;
    float uship(time) ;
        uship:data_max = 5.872143f ;
        uship:long_name = "Ship zonal velocity component" ;
        uship:C_format = "%9.4f" ;
        uship:data_min = -5.61246f ;
        uship:units = "meter second-1" ;
        uship:missing_value = 1.e+38f ;
    float u(time, depth_cell) ;
        u:data_max = 1.471237f ;
        u:long_name = "Zonal velocity component" ;
        u:C_format = "%7.2f" ;
        u:data_min = -3.910573f ;
        u:units = "meter second-1" ;
        u:missing_value = 1.e+38f ;
    float tr_temp(time) ;
```

```
tr_temp:data_max = 16.9274f ;
tr_temp:long_name = "ADCP transducer temperature" ;
tr_temp:C_format = "%4.1f" ;
tr_temp:data_min = 11.36418f ;
tr_temp:units = "Celsius" ;
tr_temp:missing_value = 1.e+38f ;
double time(time) ;
time:C_format = "%12.5f" ;
time:long_name = "Decimal day" ;
time:standard_name = "time" ;
time:data_min = 79.0378587962963 ;
time:units = "days since 2015-01-01 00:00:00" ;
time:data_max = 87.8219328703704 ;
byte pg(time, depth_cell) ;
pg:long_name = "Percent good pings" ;
pg:missing_value = -1b ;
pg:data_min = 0b ;
pg:data_max = 100b ;
pg:C_format = "%d" ;
byte pflag(time, depth_cell) ;
pflag:long_name = "Editing flags" ;
pflag:missing_value = -1b ;
pflag:data_min = 0b ;
pflag:data_max = 7b ;
pflag:C_format = "%d" ;
double lon(time) ;
lon:C_format = "%9.4f" ;
lon:long_name = "Longitude" ;
lon:standard_name = "longitude" ;
lon:data_min = 141.161636111111 ;
lon:units = "degrees_east" ;
lon:missing_value = 1.e+38 ;
lon:data_max = 147.496394444444 ;
double lat(time) ;
lat:C_format = "%9.4f" ;
lat:long_name = "Latitude" ;
lat:standard_name = "latitude" ;
lat:data_min = -47.3163638888889 ;
lat:units = "degrees_north" ;
lat:missing_value = 1.e+38 ;
lat:data_max = -42.9869805555556 ;
float heading(time) ;
heading:data_max = 179.9303f ;
heading:long_name = "Ship heading" ;
heading:C_format = "%6.1f" ;
heading:data_min = -179.6147f ;
heading:units = "degrees" ;
heading:missing_value = 1.e+38f ;
float depth(time, depth_cell) ;
depth:C_format = "%8.2f" ;
depth:positive = "down" ;
depth:long_name = "Depth" ;
depth:data_min = 13.12f ;
depth:units = "meter" ;
depth:missing_value = 1.e+38f ;
```

```
        depth:data_max = 209.13f ;
short amp(time, depth_cell) ;
    amp:long_name = "Received signal strength" ;
    amp:missing_value = 32767s ;
    amp:data_min = 20s ;
    amp:data_max = 227s ;
    amp:C_format = "%d" ;

// global attributes:
    :featureType = "trajectoryProfile" ;
    :description = "Shipboard ADCP velocity profiles from in2015_v01
using instrument os150bb" ;
    :title = "Shipboard ADCP velocity profiles" ;
    :cruise_id = "in2015_v01" ;
    :Conventions = "COARDS" ;
    :sonar = "os150bb" ;
    :history = "Created: 2016-05-12 10:53:56" ;
    :software = "pycurrents" ;
}
```