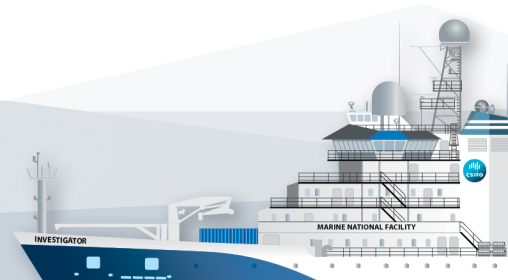


## *RV Investigator*

### ADCP Processing Report

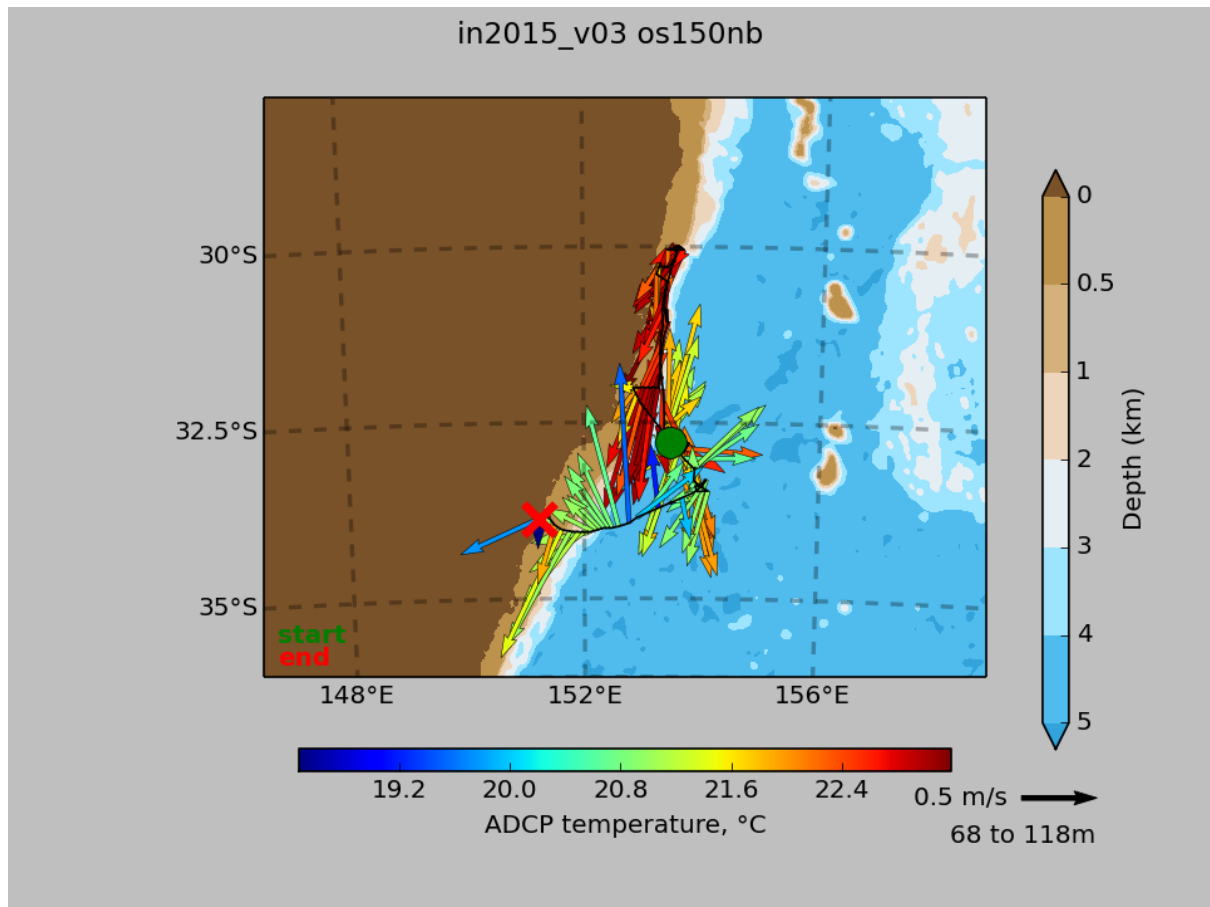
<b>Voyage #:</b>	in2015_v03
<b>Voyage title:</b>	Submesoscale processes – billows and eddies - along the productive shelf by the East Australian Current
<b>Depart:</b>	Brisbane 0700 Wednesday, 3 June 2015
<b>Return:</b>	Sydney, 0700 Thursday, 18 June 2015
<b>Voyage Manager:</b>	Max McGuire
<b>Chief Scientist:</b>	Iain Suthers
<b>Affiliation:</b>	University of New South Wales
<b>Report compiled by:</b>	Hugh Barker



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## 1 Summary



Data was collected during in2015\_v03, between Brisbane and Sydney.

Both the os150 and os75 were operated throughout the voyage. The os150 was using 8m bins, while the os75 was configured for 16m bins. ADCPs were internally triggered.

Data quality was generally good, with a few gaps due to missing data. Some surface bins were missing from the os75 data for much of the voyage; as a result, no webpy documents were generated (as these use surface bins for many of the plots)

See the voyage computing and electronics reports for more details regarding data acquisition.

A 1 min data set was produced as per user request, but this has data quality implications compared to the standard 5min averages. Further, then 1 min data has not been manually edited for bad profiles.

## 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](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 Data Header

### 3.1 os75

```
netcdf os75nb {
dimensions:
    time = 2579 ;
    depth_cell = 50 ;
variables:
    int trajectory ;
        trajectory:standard_name = "trajectory_id" ;
    float vship(time) ;
        vship:data_max = 6.278075f ;
        vship:long_name = "Ship meridional velocity component" ;
        vship:C_format = "%9.4f" ;
        vship:data_min = -6.581352f ;
        vship:units = "meter second-1" ;
        vship:missing_value = 1.e+38f ;
    float v(time, depth_cell) ;
        v:data_max = 0.9409883f ;
        v:long_name = "Meridional velocity component" ;
        v:C_format = "%7.2f" ;
        v:data_min = -1.106268f ;
        v:units = "meter second-1" ;
        v:missing_value = 1.e+38f ;
    float uship(time) ;
        uship:data_max = 5.878153f ;
        uship:long_name = "Ship zonal velocity component" ;
        uship:C_format = "%9.4f" ;
        uship:data_min = -6.016709f ;
        uship:units = "meter second-1" ;
        uship:missing_value = 1.e+38f ;
    float u(time, depth_cell) ;
        u:data_max = 2.372616f ;
        u:long_name = "Zonal velocity component" ;
        u:C_format = "%7.2f" ;
        u:data_min = -0.8404983f ;
        u:units = "meter second-1" ;
        u:missing_value = 1.e+38f ;
    float tr_temp(time) ;
        tr_temp:data_max = 38.04371f ;
        tr_temp:long_name = "ADCP transducer temperature" ;
        tr_temp:C_format = "%4.1f" ;
        tr_temp:data_min = 20.53943f ;
        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 = 153.150231481481 ;
time:units = "days since 2015-01-01 00:00:00" ;
time:data_max = 162.742858796296 ;
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 = 0. ;
    lon:units = "degrees_east" ;
    lon:missing_value = 1.e+38 ;
    lon:data_max = 155.680280555556 ;
double lat(time) ;
    lat:C_format = "%9.4f" ;
    lat:long_name = "Latitude" ;
    lat:standard_name = "latitude" ;
    lat:data_min = -32.9469694444444 ;
    lat:units = "degrees_north" ;
    lat:missing_value = 1.e+38 ;
    lat:data_max = 0. ;
float heading(time) ;
    heading:data_max = 179.9986f ;
    heading:long_name = "Ship heading" ;
    heading:C_format = "%6.1f" ;
    heading:data_min = -179.9988f ;
    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 = 22.44f ;
    depth:units = "meter" ;
    depth:missing_value = 1.e+38f ;
    depth:data_max = 814.48f ;
short amp(time, depth_cell) ;
    amp:long_name = "Received signal strength" ;
    amp:missing_value = 32767s ;
    amp:data_min = 8s ;
    amp:data_max = 217s ;
    amp:C_format = "%d" ;

// global attributes:
    :featureType = "trajectoryProfile" ;
```

```
        :description = "Shipboard ADCP velocity profiles from in2015_v03
using instrument os75nb" ;
        :title = "Shipboard ADCP velocity profiles" ;
        :cruise_id = "in2015_v03" ;
        :Conventions = "COARDS" ;
        :sonar = "os75nb" ;
        :history = "Created: 2015-11-06 16:09:51" ;
        :software = "pycurrents" ;
    }
```

## 3.2 os150

```
netcdf os150nb {
dimensions:
    time = 1529 ;
    depth_cell = 40 ;
variables:
    int trajectory ;
        trajectory:standard_name = "trajectory_id" ;
    float vship(time) ;
        vship:data_max = 6.823269f ;
        vship:long_name = "Ship meridional velocity component" ;
        vship:C_format = "%9.4f" ;
        vship:data_min = -6.89179f ;
        vship:units = "meter second-1" ;
        vship:missing_value = 1.e+38f ;
    float v(time, depth_cell) ;
        v:data_max = 1.359182f ;
        v:long_name = "Meridional velocity component" ;
        v:C_format = "%7.2f" ;
        v:data_min = -1.521646f ;
        v:units = "meter second-1" ;
        v:missing_value = 1.e+38f ;
    float uship(time) ;
        uship:data_max = 5.439848f ;
        uship:long_name = "Ship zonal velocity component" ;
        uship:C_format = "%9.4f" ;
        uship:data_min = -6.298143f ;
        uship:units = "meter second-1" ;
        uship:missing_value = 1.e+38f ;
    float u(time, depth_cell) ;
        u:data_max = 1.102152f ;
        u:long_name = "Zonal velocity component" ;
        u:C_format = "%7.2f" ;
        u:data_min = -1.917024f ;
        u:units = "meter second-1" ;
        u:missing_value = 1.e+38f ;
    float tr_temp(time) ;
        tr_temp:data_max = 23.1998f ;
        tr_temp:long_name = "ADCP transducer temperature" ;
        tr_temp:C_format = "%4.1f" ;
        tr_temp:data_min = 18.3331f ;
        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 = 162.296898148148 ;
time:units = "days since 2015-01-01 00:00:00" ;
time:data_max = 167.987939814815 ;
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 = 151.219727777778 ;
lon:units = "degrees_east" ;
lon:missing_value = 1.e+38 ;
lon:data_max = 154.115386111111 ;
double lat(time) ;
lat:C_format = "%9.4f" ;
lat:long_name = "Latitude" ;
lat:standard_name = "latitude" ;
lat:data_min = -34.0619527777778 ;
lat:units = "degrees_north" ;
lat:missing_value = 1.e+38 ;
lat:data_max = -29.9820083333333 ;
float heading(time) ;
heading:data_max = 179.8893f ;
heading:long_name = "Ship heading" ;
heading:C_format = "%6.1f" ;
heading:data_min = -179.953f ;
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 = 18.49f ;
depth:units = "meter" ;
depth:missing_value = 1.e+38f ;
depth:data_max = 338.49f ;
short amp(time, depth_cell) ;
amp:long_name = "Received signal strength" ;
amp:missing_value = 32767s ;
amp:data_min = 19s ;
amp:data_max = 216s ;
amp:C_format = "%d" ;
```

```
// global attributes:
    :featureType = "trajectoryProfile" ;
    :description = "Shipboard ADCP velocity profiles from in2015_v03
using instrument os150nb" ;
    :title = "Shipboard ADCP velocity profiles" ;
    :cruise_id = "in2015_v03" ;
    :Conventions = "COARDS" ;
    :sonar = "os150nb" ;
    :history = "Created: 2015-11-06 13:35:26" ;
    :software = "pycurrents" ;
}
```