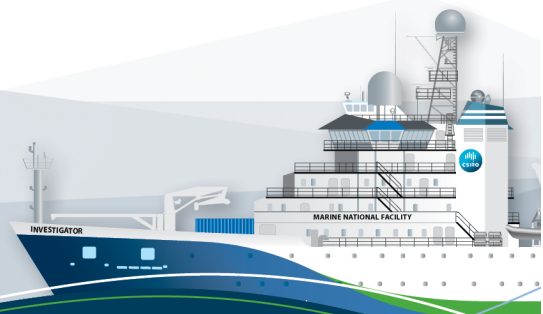
RV *Investigator*

ADCP Processing Report

Voyage #:	in2015_c02
Voyage title:	GAB deep-water pelagic and benthic ecosystem study
Depart:	Port Lincoln, 1000 Monday 30th November 2015
Return:	Fremantle, 0800 Tuesday, 22nd December 2015
Chief Scientist:	Rudy Kloser
Affiliation:	CSIRO O&A
Report compiled by:	Hugh Barker



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1 Summary

Data was collected during in2015_c02 for the duration of the voyage. Data was collected using VMDAS and post-processed using CODAS.

The OS75 unit was out of commission due to a fault, therefore only the OS150 was operational.

The drop keel was at multiple depths (flush with hull/flush with gondola) throughout the voyage. The dataset was split along keel depths, processed individually, and the resulting netCDFs concatenated to create a single processed dataset.

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

Overall data quality is good, with some editing required, especially in the top bins.

2 Processing Background

The University of Hawaii's CODAS software was used for data post-processing. Revision 269:5bd8c22f6560 dated Oct 19 2016 was used.

3 Processing Notes

See summary. No additional rotation of dataset required, some bad bins manually edited.

4 netCDF Data Headers

```
netcdf in2015_c02_os150nb {
dimensions:
        time = UNLIMITED ; // (4449 currently)
        depth_cell = 50 ;
variables:
        short amp(time, depth_cell) ;
                amp:missing_value = 32767s ;
                amp:long_name = "Received signal strength" ;
                amp:C_format = "%d" ;
                amp:data_min = 19s ;
                amp:data_max = 166s ;
        float depth(time, depth_cell) ;
                depth:missing_value = 1.e+38f ;
                depth:long_name = "Depth" ;
                depth:units = "meter" ;
                depth:C_format = "%8.2f" ;
                depth:positive = "down" ;
                depth:data_min = 23.63f ;
                depth:data_max = 415.65f ;
        float heading(time) ;
                heading:missing_value = 1.e+38f ;
                heading:long_name = "Ship heading" ;
                heading:units = "degrees" ;
                heading:C_format = "%6.1f" ;
                heading:data_min = -101.0957f ;
                heading:data_max = -90.54723f ;
        double lat(time) ;
                lat:missing_value = 1.e+38 ;
                lat:long_name = "Latitude" ;
                lat:units = "degrees_north" ;
                lat:C_format = "%9.4f" ;
                lat:standard_name = "latitude" ;
                lat:data_min = -35.1680777777778 ;
```

```
                lat:data_max = -34.8187444444444 ;
        double lon(time) ;
                lon:missing_value = 1.e+38 ;
                lon:long_name = "Longitude" ;
                lon:units = "degrees_east" ;
                lon:C_format = "%9.4f" ;
                lon:standard_name = "longitude" ;
                lon:data_min = 123.798522222222 ;
                lon:data_max = 129.822608333333 ;
        byte pflag(time, depth_cell) ;
                pflag:long_name = "Editing flags" ;
                pflag:C_format = "%d" ;
                pflag:data_min = 0b ;
                pflag:data_max = 6b ;
        byte pg(time, depth_cell) ;
                pg:missing_value = -1b ;
                pg:long_name = "Percent good pings" ;
                pg:C_format = "%d" ;
                pg:data_min = 0b ;
                pg:data_max = 100b ;
        double time(time) ;
                time:long_name = "Decimal day" ;
                time:units = "days since 2015-01-01 00:00:00" ;
                time:C_format = "%12.5f" ;
                time:standard_name = "time" ;
                time:data_min = 351.231886574074 ;
                time:data_max = 352.301354166667 ;
        float tr_temp(time) ;
                tr_temp:missing_value = 1.e+38f ;
                tr_temp:long_name = "ADCP transducer temperature" ;
                tr_temp:units = "Celsius" ;
                tr_temp:C_format = "%4.1f" ;
                tr_temp:data_min = 18.07771f ;
                tr_temp:data_max = 19.19211f ;
        int trajectory ;
                trajectory:standard_name = "trajectory_id" ;
        float u(time, depth_cell) ;
                u:missing_value = 1.e+38f ;
                u:long_name = "Zonal velocity component" ;
                u:units = "meter second-1" ;
                u:C_format = "%7.2f" ;
                u:data_min = -0.7748961f ;
                u:data_max = 0.2090974f ;
        float uship(time) ;
                uship:missing_value = 1.e+38f ;
                uship:long_name = "Ship zonal velocity component" ;
                uship:units = "meter second-1" ;
                uship:C_format = "%9.4f" ;
                uship:data_min = -6.73801f ;
                uship:data_max = -3.745428f ;
        float v(time, depth_cell) ;
                v:missing_value = 1.e+38f ;
                v:long_name = "Meridional velocity component" ;
                v:units = "meter second-1" ;
                v:C_format = "%7.2f" ;
                v:data_min = -0.4086632f ;
                v:data_max = 0.4262833f ;
        float vship(time) ;
                vship:missing_value = 1.e+38f ;
                vship:long_name = "Ship meridional velocity component" ;
                vship:units = "meter second-1" ;
                vship:C_format = "%9.4f" ;
                vship:data_min = -0.9671811f ;
                vship:data_max = -0.08630142f ;

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

```
                :history = "Wed May  2 16:18:16 2018: ncrcat
in2015_c02_os150nb_flush_with_hull_time.nc in2015_c02_os150nb_keel_fully_extended_time.nc
in2015_c02_os150nb.nc\n",
                        "Wed May  2 16:17:34 2018: ncks --mk_rec_dmn time
in2015_c02_os150nb_flush_with_hull.nc in2015_c02_os150nb_flush_with_hull_time.nc\n",
                        "Created: 2018-05-02 06:16:00 UTC" ;
                :Conventions = "COARDS" ;
                :software = "pycurrents" ;
                :hg_changeset = "2320:184969c40ec8" ;
                :title = "Shipboard ADCP velocity profiles" ;
                :description = "Shipboard ADCP velocity profiles from in2015_c02 using instrument
os150nb" ;
                :cruise_id = "in2015_c02" ;
                :sonar = "os150nb" ;
                :NCO = "\"4.5.4\"" ;
                :nco_openmp_thread_number = 1 ;
}
```