

# Cruise 0607 Report

Caro-COOPS and CORMP programs

RV Savannah

Cruise Duration: 30 Oct – 2 Nov 2006 (4 days)

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## Objectives:

- ILM02-04 deployment
- ILM02-03 recovery
- ILM03-04 deployment
- ILM03-03 recovery
- CAP02-08 maintenance
- CAP03-09 deployment
- CAP03-08 recovery

## Cruise log

Monday, 30 Oct

- Depart Pier Romeo for ILM02 at 1355

Tuesday, 31 Oct 06

- Arrived at ILM02 at 1015. ILM02 turnaround complete by 1310. Prior to departure buoy telemetry communications and instrument sensor functions were confirmed by our land based support. A CTD was made following mooring recovery.
- Arrived at ILM03 at 1530. ILM03 turnaround complete by 1815. Prior to departure buoy telemetry communications and instrument sensor functions were confirmed by our land based support. A CTD was made following mooring recovery.

Wednesday, Nov 1

- Arrive at CAP02 at 1555. Divers overboard at 1615. Divers on surface by 1650. Repair attempt deemed successful.

Thursday, 2 Nov

- Arrived at CAP03 in early morning. CAP03 turnaround complete by 1210. Prior to departure buoy telemetry communications and instrument sensor functions were confirmed by our land based support. A CTD was made following mooring recovery.
- Offload RV Savannah at 1630
- Cruise 0607 complete

## Site Summaries

ILM02-04

- Deployed successfully

ILM02-03

- Recovered successfully. During the ILM02-03 deployment duration (6 Jun to 31 Oct 06) no problems were encountered with real-time telemetry communications.

ILM03-04

- Deployed successfully

#### ILM03-03

- Recovered successfully. During the ILM03-03 deployment duration (6 Jun to 31 Oct 06) problems were encountered with instruments and real-time telemetry. Beginning 21 July communications with the surface mounted SEACAT were intermittent. By 9 Aug, communications with this instrument were lost. On 18 September UNCW/CORMP divers removed this SEACAT for evaluation.
- On 6 Oct real-time telemetry with the buoy was lost.

#### CAP02-08

- Repair attempts to clean out conductivity cell were successful. CAP02-08 was deployed on 23 Aug 06 on cruise 0606. Evidence of fouling to the conductivity cell was found on 2 September shortly after Hurricane Ernesto passed the area. On 1 Nov 06, divers were deployed to clean out the bottom mounted SEACAT conductivity cell.

#### CAP03-09

- Deployed successfully

#### CAP03-08

- Recovered successfully. During the CAP03-08 deployment duration (9 May to 2 Nov 06) problems were encountered with the NEMO waves processing module and real-time telemetry was temporarily lost. On 15 Aug no data was being output from the NEMO waves processing module. Repair attempts were successful from remote dial-ins to the buoy from Raleigh on 16 Oct.
- On 23 Aug, cruise 0606, the NEMO battery pack was replaced as a preventative measure.
- Real-time telemetry to the buoy was lost on 23 Aug. Ten days later real-time telemetry was regained and communications remained throughout the rest of the deployment.

### **Post-cruise Diagnostics**

As of today (4 December 06), the ILM02-04, ILM03-04, CAP02-8 and CAP3-09 moorings are reporting as scheduled. An improvement to our buoy controller/data logger sampling scheme was made on these deployments in order to reduce the time between when the buoy polls data from our instrument suite to when we upload these data via satellite to Columbia, SC. This improvement results in data being between 5 and 25 minutes old for web display depending on site.

ILM02-03 ADCP data was not saved to the instruments memory card for the entire deployment. Therefore, the only ADCP data available for this deployment is current direction and magnitude every 2 hours or the data that is polled by the buoy datalogger and upload remotely via satellite. Unfortunately this does not include wave's data as these data are not polled by the data logger or available real-time at this site. This problem has never occurred on any previous or current deployment. On the bench, the ADCP passed all tests and the proper pre-deployment commands were checked. We are currently working with TRDI to determine the cause of this failure.

Diagnostics on the recovered ILM03-03 buoy indicate the loss of telemetry with the buoy on 6 October was a direct result of water entering the buoy well through the side well cable fittings and compromising the Iridium modem connector. Despite losing communications to the buoy on 6 October, the buoy datalogger continued to sample the instrument suite and log data until 30 October when it finally failed due to an expended 12V battery supply at 5.0V.

Bench tests on ILM03-03 surface SEACAT post-recovery found no communication problems that were exhibited during the deployment. We were able to communicate with the instrument on the bench and

found the instrument continued to log data despite the loss of real-time still communications. This instrument is currently at the vendor for examination/testing.

Bottom salinity measurements from the CAP2 SEACAT were regained to normal following repair attempts on 1 November. New designs to the bottom frame SEACAT mounts are under way to reduce sediment fouling.

*Cruise report prepared 4 December 2006 by J. Bichy*