5.22 LADCP

(1) Personnel

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(2) Objectives

To obtain horizontal current velocity in high vertical resolution.

(3) Methods

In order to measure the velocity structure at fine vertical scales a high frequency ADCP was used in lowered mode (LADCP). The instrument was a Teledyne RDI Workhorse Sentinel 600kHz ADCP rated for 1000m depth.

The instrument was attached to the frame of the CTD system using a steel collar sealed around the instrument by three bolts on each side, with the collar attached to the rosette frame by two u-bolts on two mounting points (see Figure 5.22-1).

The instrument was deployed on all CTD stations in the tropics, performing well throughout its use. The instrument is self-contained with an internal battery pack. The health of the battery is monitored by the recorded voltage count.



Figure 5.22-1: Mounting of LADCP on CTD System

The instrument was controlled at deploy and recover stages by the RDI software (BBTalk) installed on the Windows PC. The commands sent to the instrument at setup were contained in ladcp600.cmd. The instrument was set up to have a relatively small bin depth (2m) and a fast ping rate (every 0.25 sec). The full list of commands sent to the instrument were:

CR1	# Retrieve parameter (default)	
TC2	# Ensemble per burst	
WP1	# Pings per ensemble	
TE 00:00:00.0	0 # Time per ensemble (time between data collection cycles)	
TP 00:00.25	# Time between pings in mm:ss	
WN25	# Number of Depth cells	
WS0200	# Depth cell size (in cm)	
WF0088	# Blank after transit (recommended setting for 600kHz)	
WB0	# Mode 1 bandwidth control (default - wide)	
WV250	# Ambiguity velocity (in cm/s)	
EZ0111101	# Sensor source (speed of sound excluded)	
EX00000	# Beam coordinates	
CF11101	# Data flow control parameters	

(see the RDI Workhorse "Commands and Data Output Format" document for details.)

(4) Preliminary results

During the cruise, 221 profiles were obtained in total, including fixed point measurement and line measurement. All the data has to be converted and quality-controlled before the analyses. The further analyses will be in near future.

(5) Data archive

All data obtained during this cruise will be submitted to the JAMSTEC Data Management Office (DMO).