South West Nova Scotia ADCP Data
File Information

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November 23, 2012

The data is stored in a format that allows Brian Polagye's toolbox to be easily run. All speeds are in units of m/s. The region above the surface has NOT been removed from the data files, but should be ignored in analysis. The data provided is 10 minute ensemble averages of the raw data.

In each file the latitude and longitude are stored in the variables *lat* and *lon*, respectively. The measured fields are contained in 3 structures: *data*, *time*, and *pres*. The number of vertical bins is nb and the number of time measurements is nt.

The fields of these structures are:

- **data**

Field	Matrix Size	Description
bins	$nb \times 1$	vertical height above the bottom of each bin
vert_vel	$nt \times nb$	vertical velocity
error_vel	$nt \times nb$	error velocity (difference in two independent measurements of vertical velocity)
east_vel	$nt \times nb$	eastward velocity relative to true north
north_vel	$nt \times nb$	northward velocity relative to true north
dir_vel	$nt \times nb$	direction of velocity (north = 0 degrees, cw positive)
mag_signed_vel	$nt \times nb$	signed speed (ebb negative, flood positive)

- **pres**

Field	Matrix Size	Description
surf	$nt \times 1$	free surface elevation in metres (if measured)

- **time**

Field	Matrix Size	Description
mtime	$nt \times 1$	time stamps of the measurements (in matlab's mtime format)

The parameters used in saving the files are also available in the data file within the *params* structure. The fields of this structure are

Field	Description
tmin	start time in year day of 2012
tmax	end time in year day of 2012
zmin	minimum depth above bottom for saved data
zmax	minimum depth above bottom for saved data
approxdepth	approximate depth of ADCP
flooddir	approximate angle of flood tide (used in determining signed speed)
declination	declination angle used to rotate from magnetic north to true north
lat	latitude of ADCP
lon	longitude of ADCP
dabADCP	depth above bottom of ADCP (used in determining bin heights)
dabPS	depth above bottom of the pressure sensor