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 SEED-1\_mat/ data from initial deployment, May - October 2004

Files: MS1.mat - MS14.mat are main data files for the 14 moorings.

Variables (from MS1.mat)

Name	Size	Bytes	Class	Description by SVG
sl_T	17564x1	140512	double	this looks like a time series of surface temperature in deg C (order 20 dg)
sl_depth	1x24	192	double	24 depths in meters running from shallow to deep
sl_press	1x24	192	double	24 depths in pressure in decibars (1), (4)
sl_time	17564x1	140512	double	decimal day of the year, day 0 corresponds to January 1, 2004
sl_u	17564x24	3372288	double	eastward velocity in cm/sec (2)
sl_v	17564x24	3372288	double	northward velocity in cm/sec (3)
sl_w	17564x24	3372288	double	upward velocity in cm/sec

Number of depths at each mooring

1: 24  
 2: 26  
 3: 25  
 4: 37  
 5: 37  
 6: 37  
 7: 46  
 8: 46  
 9: 47  
 10: 47  
 11: 46  
 12: 48  
 13: 46  
 14: 47

Files: A1.MAT - A4.mat are apparently data from the AA RCM9-Aanderraa RCM9 acoustic current meters at moorings 11-14 since they only have a single depth of ~900 meters and a bottom depth of ~1000 meters. see: Table 1. Teague et al, Continental Shelf Research 26 (2006) p. 2561.

Variables (from A1.mat)

Name	Size	Bytes	Class	Description by SVG
Alprs	1x1	8	double	looks like pressure in millbars at the current meter (1)
Alu	4492x1	35936	double	eastward velocity in cm/sec (2)
Alv	4492x1	35936	double	northward velocity in cm/sec (3)
timeA1	4492x1	35936	double	decimal day of the year, day 0 corresponds to January 1, 2004
tmpA1	4492x1	35936	double	looks like a temperature time series in at the current meter (order 5 dg C)

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 SEED-2\_mat/ data from re-deployment, November 2005-May 2005

Files: LS1.mat - LS13.mat are main data files for the 13 moorings. Mooring 14 was not redeployed due to equipment failure.

Variables (from LS1.mat)

Name	Size	Bytes	Class	Description by SVG
Lsl_T	17107x1	136856	double	this looks like a time series of surface temperature in deg C (order 20 dg)
Lsl_depth	1x26	208	double	26 depths in meters running from shallow to deep
Lsl_press	1x26	208	double	26 depths in pressure in decibars (1), (4)
Lsl_time	17107x1	136856	double	decimal day of the year, day 0 corresponds to January 1, 2004
Lsl_u	17107x26	3558256	double	eastward velocity in cm/sec (2)
Lsl_v	17107x26	3558256	double	northward velocity in cm/sec (3)
Lsl_w	17107x26	3558256	double	upward velocity in cm/sec

Number of depths at each mooring

1: 26  
 2: 27  
 3: 26  
 4: 37  
 5: 39  
 6: 39  
 7: 45  
 8: 46  
 9: 45  
 10: 47  
 11: 46  
 12: 46  
 13: 46  
 14: not deployed

Files: All1.MAT - All3.mat are apparently data from the AA RCM9-Aanderraa RCM9 acoustic current meters at moorings 11-13 since they only have a single depth of ~900 meters and a bottom depth of ~1000 meters. see: Table 1. Teague et al, Continental Shelf Research 26 (2006) p. 2561.

Variables (from All1.mat)

Name	Size	Bytes	Class	Description by SVG
All_T	4126x1	33008	double	looks like a temperature time series at the current meter (order 5 dg C)
All_pressure	1x1	8	double	looks like pressure in decibars at the current meter (1)
All_time	4126x1	33008	double	decimal day of the year, day 0 corresponds to January 1, 2004
All_u	4126x1	33008	double	eastward velocity in cm/sec (2)
All_v	4126x1	33008	double	northward velocity in cm/sec (3)

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Notes:

1. 1 decibar =  $10^4$  Pa, so it is approximately numerically equal to the depth in meters. 1 millbar = 100 Pa, so it is approximately numerically equal to .01 X depth in meters.
2. This is eastward velocity and NOT 20 degree rotated "upcoast" velocity (opposite wave CSW propagation direction) mentioned in the papers (see immediately below).
3. This is northward velocity and NOT 20 degree rotated "onshore" velocity mentioned in the papers (see immediately below).

from: Carnes et al, Continental Shelf Research 28 (2008) p. 401 (similar wording appears in Teague et al on p. 2562). Since currents at the shelf break and along the continental slope in the northern Gulf of Mexico often follow the bathymetry (Teague et al., 2006) the current data were rotated 20 dg counterclockwise from the east so that u components were along shelf and v components were cross shelf for some of the analyses performed here. Positive u values are referred to as upcoast and negative u values are referred to as downcoast (the propagation direction of coastal Kelvin waves in the northern hemisphere against a northern shoreline). Positive and negative v values are referred to as onshore and offshore, respectively.

The velocity data look like (eastward,northward) components because they are both the same size peaks of 50-70 cm/sec whereas (along-shelf,cross-shelf) velocities would have peaks of (70,20) cm/sec. see: Fig2. Teague et al, Continental Shelf Research 26 (2006) p. 2565.

(u,v) = (eastward,northward) was VERIFIED in a email from Bill Teague recieved 3/12/2012.

4. Pressure is slightly greater than depth.

References:

Teague et al, Continental Shelf Research 26 (2006) 2559-2582. "Low-frequency current variability observed at the shelfbreak in the northeastern Gulf of Mexico: May-October, 2004."

Carnes et al, Continental Shelf Research 28 (2008) 399-423. "Low-frequency current variability observed at the shelfbreak in the northeastern Gulf of Mexico: November 2004-May 2005"