

## Understanding Gulf Ocean Systems

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### ACOUSTIC DOPPLER CURRENT DATA

Acoustic Doppler Current Profiler (ADCP) data from the R/V Pelican 75kHz RDI Ocean Surveyor were acquired and processed with the University of Hawaii Data Acquisition System (UHDAS) on cruises PE19-28, PE20-06, PE21-05, and PE21-20. Spatial coverage of the data is from approximately 25°N to 29°N, 90.5°W to 85.5°W. Temporal coverage for cruise PE19-28 includes decimal days 162 (6/12/2019) through 175 (6/25/2019), for PE 20-06 decimal days 263 (9/21/2019) through 275 (10/3/2019), for PE21-05 decimal days 267 (9/24/2020) through 279 (10/6/2020) and for PE21-20 decimal days 130 (5/11/21) through 139 (5/20/21). Vertical bin size is 10 m with variable “zc” the center depth of the 10 m bin.

Provided here are links to 2 Matlab format files extracted from the UHDAS CODAS database for each cruise:

`contour_xy.mat`

`contour_uv.mat`

The following code, taken from [Tools to access ADCP data](#), can be used to read the Matlab files.

```
load contour_uv.mat
```

```
load contour_xy.mat
```

```
x=xyt(1,:);
```

```
y=xyt(2,:);
```

```
dday=xyt(3,:);
```

```
u=uv(:,1:2:end);
```

```
v=uv(:,2:2:end);
```

```
%zc is center of depth bins
```

```
badi=find(isnan(x));
```

```
x(badi)=[];
```

```
y(badi)=[];
```

```
dday(badi)=[];
```

```
u(:,badi)=[];
```

```
v(:,badi)=[];
```

Variable	Description	Units
x	longitude	decimal degrees
y	latitude	decimal degress
zc	10 m bin center depth	m
dday	decimal day	
u	zonal velocity	$\text{m s}^{-1}$
v	meridional velocity	$\text{m s}^{-1}$

Table 1: Variable descriptions. The time variable is a zero-based decimal day: Noon on Jan 1 is 0.5 (not 1.5)