

CS3/CS3X Tide+Surge Model - Data Format

CS3 Tide+Surge, Tide only and Residual Surge Data Files

Hindcast of hourly level and current simulations from the NOC CS3 Model are available for total tide and surge (T+S) and surge residuals for the years 1992 onwards.

The model makes use of meteorological data from the UK Met. Office Operational Storm Surge Local Area Model (1992 to 1998), Mesoscale model (1999 to 2005), North Atlantic European model (2006) and the extended area CS3 surge model (CS3X) (2007 onwards). The data being hindcast from the NOC CS3 and CS3X Models using a combination of measured and modelled meteorological data.

Tide level and depth averaged current speed and direction, hindcast or prediction, can also be supplied as time series from the NOC CS3 numerical model. Tidal prediction is based on up to 50 tidal harmonic constituents.

The NOC CS3 and CS3X model grid have a resolution of 1/9° latitude by 1/6° longitude (approx. 12km).

Position of Parameters within CS3/CS3X Model Grid

The values for elevation, z (metres), east component of current, u, and north component of current, v, (both m/s) are all sited at the centre of the grid square.

Naming convention

Files are named **siiiijj_yyyy.dat** for tide+surge,
riiijj_yyyy.dat for surge residuals

where **iii** and **jjj** represent the CS3 or CS3X model grid reference with **iii ref (CS3X) = iii ref (CS3)+48** and **yyyy** represents the year.

Format of Data Files

Each data file contains the time series data for every location, for a specific year, indicated by the filename. For each location the hourly time series, for each parameter, z (elevation), u (east-going current component) and v (north-going current component) is given. Each record holds twelve hours of data followed by the date and hour with format (12f6.2,1x,2i2,i4,1x,i2). There are two records per day, the first record covers 0000hrs to 1100hrs, the second record 1200hrs to 2300hrs, the hours value at the end of each record (either 00 or 12) indicates the starting hour of each line.

Sample Output

```

1           2           3           4           5           6           7           8
1234567890123456789012345678901234567890123456789012345678901234567890123456789012345

```

```
Parameter Z: CS3 Location (iii,jjj) Lat latval Lon lonval
```

```
2 rows per day giving values at hour specified below (12f6.2)
```

```
0000 0100 0200 0300 0400 0500 0600 0700 0800 0900 1000 1100 ddmmyyyy hh
1200 1300 1400 1500 1600 1700 1800 1900 2000 2100 2200 2300 ddmmyyyy hh
```

```
:
```

```

where iii,jjj represent the i and j grid references for POL's CS3 or CS3X Model Grid
latval is latitude (f6.3), lonval is longitude (f7.3) (-ve indicates West)
ddmmyyyy represent day, month, year
hh represents start hour of each line (ie either 00 or 12).

```

```
Parameter U: CS3 Location (iii,jjj) Lat latval Lon lonval
```

```
:
```

```
Parameter V: CS3 Location (iii,jjj) Lat latval Lon lonval
```

```
:
```

```
eof
```

```
example of first 2 lines
```

```
Parameter Z: CS3 Location (102, 73) Lat 54.944 Lon 4.917
```

```
-0.20 -0.18 -0.10 0.02 0.10 0.07 0.04 0.04 -0.02 -0.11 -0.18 -0.23 01012003 00
```