Appendix 8

Web Tools Data Input

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This appendix contains information on the data parameters that must be entered into the Graphical User Interfaces that are used by the web based tools.

1. Wave predictor

The user must enter:

Wind speed in m/s.
Fetch in km.
Duration in hours.

The program uses the JONSWAP formulae to calculate the significant wave height (m) and the peak period (s).

2. Surf predictor

The user must enter:

The deep water (offshore) wave height in m.
The deep water wave period in s.
The beach slope (1 in X), enter X.
The angle that the wave crests make with the depth contours.

The program outputs the characteristics of the surf zone. For waves crests that are aligned at a non-zero angle with the depth contours there can be a significant alongshore current in the surf zone.

3. Sand transport

The user must enter:

The significant wave height in m.
The wave peak period in s.
The water depth in m.
The current speed in m/s.

The program uses the Soulsby-Van Rijn formulae to calculate the total sand transport rate in kg/m/s.

4. Tidal maps - whole region

The user must enter:

Their email address.
The date of the first map (day, month, year).
The time of the first map (hour, min) in GMT.
The time interval between maps in hours.
The number of maps (maximum = 10).
The port for the tidal staff (Liverpool, Dublin, Holyhead, Wexford, or Milford Haven).

The program will create a sequence of maps and compress them into a single file. The zip file will then be emailed to the end user and can be unpacked using a program such as Winzip. The maps will cover the entire INTERREG region of the Irish and Celtic Seas.

5. Tidal maps - zoom version

In addition to the information required above, the user must enter:

The vector frequency of the tidal vectors (1 in N). Enter N.
The staff position in decimal values of latitude and longitude. The longitude must be entered as a negative number as it will be to the west of Greenwich. The lat/lon defines the centre of the staff in the plot region.
The height of the tidal staff expressed in degrees of latitude.
The position of the velocity scale arrow in decimal values of latitude and longitude.

The length of the scale to represent 1 m/s expressed in degrees of longitude.
The limits of the required zoom region in decimal degrees. (Bottom, Top, Left, Right).

Note: The longitude must be entered as a negative number.

The program will create a sequence of maps and compress them into a single file. The zip file will then be emailed to the end user. The maps will cover the user selected region of the Irish and Celtic Seas.

6. Spill simulator

The user must enter:

Their email address.
The latitude and longitude of the release location in degrees and minutes. The degrees part of the longitude must be entered as a negative value.
The release time (hour, min) in GMT and the date (day, month, year).
The duration of the calculation in hours.
The output interval for the results in hours.
The horizontal diffusivity in m^2/s. If a negative value is entered, the calculation will make the horizontal mixing depend on the tidal speed.
The vertical diffusivity in m^2/s.
Specify if decay is to be included in the calculation (Yes/No).
If decay is included, enter the e-folding decay time scale in hours.
Specify whether the plots are to be shown separately or superimposed on a single page.
Specify whether the release is instantaneous or continuous.
If the spill is continuous, enter the duration of the release in hours.
Specify the size of the release in kg.
Specify the size of the horizontal bins in m that are to be used when contouring the concentrations.
Specify the vertical depth range (Dmin, Dmax) in m within which the concentration is to be calculated.

The program will zip together the plots and the two ASCII output files into a single file which will be emailed to the end user.