Interpreting LOPC Output Data Files (May 2009 – A. Herman)

The program 'LOPC_PostPro' analyzes and outputs LOPC data in a 'csv (comma-separated-value) file format. In the example below is described the output analysis file 'LOPCdata_2_1.csv' resulting in the analysis of 'LOPCdata_2.dat'.

Row 1
– titles the analysis section for the sum of SEP & MEP data. Additional columns record specifics of the analysis selected – such as depth range (12-84 m) etc.

Row 2
Output of all raw counts (SEP plus MEP) recorded by the LOPC (col. B) –
- areal counts/m^2 (col. D) based on the total counts in a 1 m^2 area within the depth range 12-84 m.
- total water volume m^3 (col. H) sampled by the LOPC within the depth range of 12-84 m.

Row 3
Filtered Counts – output of counts recorded by the LOPC (col. B) within the depth range 12-84 meters and an esd range 100-3500 μm. This esd range is selected from the parameter window of LOPC_PP.exe and set by the user in the section 'Filter (SEP & MEP) Counts & Biomass'. The minimum esd corresponds to A_{MIN} and the maximum esd corresponds to E_{MAX} respectively.
- areal counts/m^2 (col. D) based on the totalfiltered counts in a 1 m^2 area within the depth range 12-84 m.
- depth & esd range used in the calulation of filtered counts are specifed at the end of Row 3.

Row 4
- esd diameter bins (5) separated into 5 groups based on the ranges set by the user in the section 'Filter (SEP & MEP) Counts & Biomass'.

Row 5
- -total raw counts recorded by the LOPC and separated into the 5 esd size ranges (Cols. B-F). The summed total is listed in Col. I.

Row 6
- areal counts recorded by the LOPC and separated into the 5 esd size ranges (Cols. B-F). The summed total is listed in Col. I.

Rows 8-12
Same as Rows 2-6 except calculated for biomass only (SEPs plus MEPs)

Rows 14-18
Similar to Rows 2-6 except calculated for MEP counts only.

Rows 20-24
Similar to Rows 14-18 except calculated for MEP biomass only.

Row 25
Rejected MEP data based on unacceptable time-of-transit measurements, excessive # of elements.

Row 26
MEP counts >6mm and listed in 1mm size steps per column.

Row 27
Total biomass of MEP counts >6mm and also MEP counts of excessive size esd.

Row 29-32
Ratio of Length/Diameter based on Length & Diameter measurements selected from the parameter window of LOPC_PP.exe and set by the user in the section 'Filter MEP Plankton Counts'. Counts & biomass are listed in each of the 3 ranges of A, B, C.

Rows 34-45
These are data calculated for the normalized biomass size spectra of the LOPC data in this analysis. Most of the data is experimental and under development, however standard data that can be utilized by the user are from Rows 34-37.

Rows 47-148
LOPC data is separated into 1 meter depth bins and reported in various formats:
Col. A –depths,
Col. B – the # of CTD samples in the depth bin,
Col. C, D, E temperature, conductivity & salinity
Col. F - (actual salinity)
Col. G-J analog parameters from C-line
Col. K – CTD depth change rate.
Col. L - LOPC measured speed
Col. M experimental under development
Col. N – total counts per cubic meter
Col. O-S - counts per cubic meter separated into selected size ranges.
Col. T – total biomass per cubic meter
Col. U-Y – biomass per cubic meter separated into selected size ranges.
Col. AA-AC experimental
Col. AD – water volume measured by the LOPC at that depth

Rows 151-157
Biomass per cubic meter –separated in 25 m depth ranges and separated into 15 μm bins

Rows 159-160
Areal Biomass per square meter – summed over all depths - and separated into 15 μm bins.

Rows 163-169
Counts per cubic meter –separated in 25 m depth ranges and separated into 15 μm bins

Rows 171-172
Areal counts per square meter – summed over all depths - and separated into 15 μm bins.

Rows 175-187
Counts per cubic meter –separated in 10 m depth ranges and separated into 15 μm bins

Rows 189-190
Areal counts per square meter – summed over all depths - and separated into 15 μm bins.

Rows 193-215
Counts per cubic meter –separated in 5 m depth ranges and separated into 15 μm bins

Rows 217-218
Areal counts per square meter – summed over all depths - and separated into 15 μm bins.

Rows 220-224
Experimental