Documentation for the pan-Arctic fluvial particulate organic carbon concentration and flux dataset

**The dataset contains three files:**

1. **“Arctic\_Reach\_GRWL.shp”** provides 14,672 ESRI shapefile polylines of river centerlines and associated attributes:

Code: Tile number; equals GRWLcode

ID: unique ID of river segment in each tile; equals SegID

Width\_mean: width of river (meters)

RLength: length of river (kilometers)

HYBAS\_ID: the ID number of HydroBASINS where the river is located

1. **“Reach\_Monthly\_POC.xlsx”** provides monthly average particulate organic carbon concentrations (POC, unit: μg/L) at each reach. The first 2 columns in the “\*.xlsx” file list the GRWLcode and SegID, and the following columns record the monthly POC from Jan. 1985 to Dec. 2022.
2. **“POC\_flux.xlsx”** provides annual average POC flux and trends at 200 river mouths and ice sheet outlets, including the location (Longitude & Latitude), Mean Discharge (km3/year), Mean POC flux (t/year), POC flux trend (t/year/year), Significance (P-value from MK-test)