Instructions for Read_SOCATv3_v2019.m

This is the routine to get the SOCAT v3.0 (2015) to v2019 data into matlab. The data files are the "SOCAT V3-V2019" global and regional zip files, which can be downloaded from the SOCAT Data Download page on www.socat.info. It can also read the individual cruise files from Pangaea (http://doi.pangaea.de) as well as the ascii or csv files downloaded from the cruise viewer on the SOCAT website. Several files can be selected, all with the same extension.

Instructions:

Possible User Input:

readlines = number of lines read per loop Some computers might overload if this number is too big. Lower the number if that's the case. 10,000 seems to work well.

dflt = set of column numbers that will show up as selected when interface is created. They can be deselected at will on the interface.

①Start the program, then select the file you want to import. The following extensions are allowed: .txt .tab.tsv .tsv .csv .rtf

⁽²⁾Select the variables you want to import individually on the interface...click OK. [clicking CANCEL will stop the program]

000	Figure 1	
	Select Variable to Import	
cruise_ID	Pressure_atm	
cruise_name	O Pressure_equi	
⊖ w	🔿 woa_sss	
) mon	🔘 ncep_sip	
) day	C ETOPO2_depth	
hour	fCO2_rec	
) min	O fCO2_source	
 Iongitude 	O gvcoz	
latitude	 Julan_day_GM 	r
O depthW	WOCE_flag	
O temp	🔘 doi	
sainty	O Averaged	
O Temperature_equi		Cancel OK

③Enter the geographical limits of the data you want to import ...click OK. [clicking CANCEL will stop the program]

-180	
Max. L	ongitude
180	
Min. La	atitude
-90	
Max. L	atitude
90	
	OK Cancel

The names displayed are the column headers The resulting variables in Matlab will have the same names. ④ If applicable, select the cruise and/or data flags to be imported.

e Edit View Insert Tools Desktop Wi	ndow Help 🏻	$\Theta \circ \circ$	Data Fla	g Selection	and the second s	
Select Cruise Flags to Import		File Edit View	w Insert To	ools Desktop	Window	Help
(see the QC Cookbook on the SOCAT website	e)		Select Data W	OCE Flags to Impor	t	
A(11) B(12) C(13)	 D(14) 	 2 (good 	0) .) 3 (questionable)	• 4 (ba	d)
	Cancel OK				Cancer	

⑤ A progress bar will appear. When it disappears, the data will be loaded in Matlab.

Other details:

- It reads the file until the column headers are found.
- Determines # of columns from # of headers.
- Creates GUI to ask user which columns to import
- If Lat or Lon are selected for import, it creates another GUI to ask user which geographical region to import.
- If cruise flags are present and selected for import, it creates a GUI to select which flags to import. Likewise with data flags
- Data is stored in variables named after column headers
- Anything before column headers is stored in 'StartText' variable

Quick Look:

Code has been added at the end (starting at line 379) to do a quick 3D plot of data. To run this code, do the following:

- Change "fCO2rec" for the variable name to be plotted
- Highlight the code from line 386 to 406
- Right-Click on the selected code and select "Evaluate Selection"