1. Create\_intial\_conditions

Initial conditions for 09/01/2014, and also 01/01/2016 for a specific year run. I also attached two .dat file, and make sure we always have them under the same directory as long as you have a bpch file.

1. OCO\_2\_NG\_V9

Daily-basis OCO2 NG retrievals for v9; note the script to cut the data from David Baker has been attached in the previous files.

1. OptData.

Run.pro under the directory is used to convert bpch to csv file. This dir is used in the cost\_function.m. (please search the word ‘OptData’ to find where to specify the dir).

1. zc46

This is the flux data, in cost\_function.m, we first convert the flux data to netcdf version; and them we use run.pro to convert netcdf to bpch. You will find both netcdf and bpch under this directory. (please search the word ‘zc46’ to find where to specify the dir).

1. ocean fluxes

monthly ocean fluxes data in umol/m2/s from years 2015 to 2019. The data is only avail to year 2017, so we use 2017 to represent year 2018 and 2019. Please use our landmap to make sure there is no overlap of land and ocean before using this ocean flux data to construct X.