NUTS Averaging Guide - Using Python Scripts

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1. Copy the nuts area average file into a folder containing NetCDF files.
   (nuts0 or nuts2 scripts available in VM data/private/resources depending on desired resolution)
   nuts0_area_average_lsm.py
   nuts2_area_average_lsm.py

2. Open the file in vim (or your preferred text editor):
   vim nuts2_area_average_lsm.py

3. Change directory line to your current directory (where the NetCDF files are located) and save file:
   directory_in_str = '/data/private/wemc/10WS/10WS_nc/10WS'

4. Activate Conda environment:
   source activate c3s_wemc

5. Run python script (using no hang-up command):
   nohup python nuts0_area_average_lsm.py &
   - NUTS0 processing will take roughly 1 day per variable (1979-2017, Europe Region)
   - NUTS2 processing will take roughly 3 days per variable (1979-2017, Europe Region)

6. The script will generate processed .csv files in the same folder, appending the relevant NUTS code to the beginning of each filename:
   TR_H_ERA5_ECMW_TL639_WS-_0010m_Euro_025d_S201601010000_E201612312300_INS_MAP_01h_NA-_noc_org_NA_NA---_NA---_NA---.csv

7. Copy the csv_merge file into the folder containing the processed CSV files.
   (nuts0 or nuts2 merge scripts available in VM data/private/resources)
   csv_merge_nuts0.py
   csv_merge_nuts2.py

8. Open vim and change path line to your current directory (where the CSV files are located):
   path = r'/data/private/wemc/10WS/10WS_nc/'

9. Run the csv_merge script to merge all the csv files into one. This script will take the NUTS code from each file and create separate columns in alphabetical order.

   If you are running NUTS2, this will output yearly files (due to the volume of data produced). You can then run the csv_append_nuts2.py to join these into one file, if required.
   nohup python csv_merge_nuts0.py &

10. Example of output merged filename:
    H_ERA5_ECMW_TL639_WS-_0010m_Euro_nut0_S197901010000_E201712312300_INS_MAP_01h_NA-_noc_org_NA_NA---_NA---_NA---.csv