

Format for data files for Problem 5

I. Files TES_prof_sample*.dat contain the TES profiles. The contents are:

- 1) Obs# num_levs lon lat surface_press
- 2) Retrieval_press_levels[1: num_levs]
- 3) TES_apriori[1:num_levs]
- 4) TES_CO_prof[1:num_levs]

II. Files TES_covar_sample*.dat contain the TES observation error covariance. The contents are:

- 1) Obs# num_levs lon lat surface_press
- 2) Covariance[1:num_levs,1:num_levs]

III. Files TES_avgkern_sample*.dat contain the TES averaging kernels. The contents are:

- 1) Obs# num_levs lon lat surface_press
- 2) Averaging_kernel[1:num_levs,1:num_levs]

IV. The file mopitt_xa.dat contains the MOPITT a priori profile. The contents are:

- 1) Num_levs
- 2) Press_levels[1:num_lev]
- 3) MOPITT_apriori[1:num_lev]

Here num_lev indicates the number of pressure levels in the retrieval. Please note that the averaging kernel is not necessarily symmetric. When reading the averaging kernel data, fill the matrix by row i.e. the first num_lev values in the averaging kernel file corresponds to the first row of the matrix. Also, the CO profile (retrieved and a priori) are given in units of ppb.