Data description

Data in the three folders was used for “Temporal variability of quasilinear pitch-angle diffusion” Clare E. J. Watt” (2022),Hayley J. Allison,Sarah N Bentley,Rhys L Thompson,I Jonathan Rae,Oliver Allanson, Nigel P. Meredith,Johnathan P J Ross,Sarah A Glauert,Richard B. Horne,Shuai Zhang,Kyle R Murphy, Dovilė Rasinskaitė,Shannon Killey, Front. Astron. Space Sci. - Space Physics, DOI: 10.3389/fspas.2022.1004634

The data files contain the results and input for the ensemble numerical experiments described in the manuscript. There are 3 sets of experiments for 3 different L* locations. Each set of experiments has 6 different Δt (timescale of variability). Each experiment has 60 scenarios. In each folder, there are 60 files with phase space density as a function of pitch-angle (91 values) and time (121 values). There are also 60 files listing the series of index numbers for the random selection of diffusion coefficients used in each individual scenario. The index number refers to the lists at of diffusion coefficients archived at “PADIE diffusion coefficients for plasmaspheric hiss” (Watt et al., 2019)

Naming conventions:

Folders are named after the Δt (timescale of variability) used in the ensemble experiment.

Files are named:

JJ_KKKKvariation_LXXX.1d	Phase space density
JJ_KKKKvariation_diffindex_LXXX.index	Index numbers

Where JJ is the scenario number, KKKK is the Δt and XXX is the L* bin.

Watt, Clare, Allison, Hayley, Glauert, Sarah and Meredith, Nigel (2019): PADIE diffusion coefficients for plasmaspheric hiss. University of Reading. Dataset. https://doi.org/10.17864/1947.212