Comparing Log-distance Ratios with Correlated Errors

**Problem Overview**

We want to check if the log-distance ratios obtained from our pipeline match with previous results. The previous results for the comparisons are Springob et al. (2014) and Howlett et al. (2022) for 6dFGS and SDSS peculiar velocities, respectively. Springob et al. 6dFGS PVs differ from ours mainly from the removal of late-type galaxies by visual inspections. Howlett et al. SDSS PVs differ from ours from the brighter limiting magnitude applied to the new sample and the use of 2MASS photometry for the FP observables.

To check the consistencies in the derived log-distance ratios, we take duplicate measurements of the same galaxies and calculate their differences. We can then plot the distribution of those differences and their trend across redshift.