**Subtracting predicted logdists from observed/FP logdists**

1. **First Method**

Given a galaxy with an observed redshift , we have three two estimates of peculiar velocities, and so two estimates of the redshift due to peculiar velocities:

1. Peculiar velocity redshift inferred from the FP:

where is the “cosmological” redshift calculated from the observed log-distance ratio

And by inversing the distance-redshift relation. We can then calculate the peculiar velocity redshift from our FP method .

1. Peculiar velocity redshift from a velocity field model:

where is the line-of-sight peculiar velocity for a galaxy at a certain observed redshift and location . We can also calculate the cosmological redshift predicted from the model , which we will use as the estimate for a galaxy’s true distance

Once we obtain and , we can calculate the “residual” cosmological redshift after combining both contribution to the peculiar velocities using

We can then calculate the “residual” log-distance ratio as

Our goal is to set the error-weighted average for galaxies with .

Q: what is the uncertainty/error of ?

1. **Second Method**

This is the method I used when doing the north—south comparison (the plot ‘with PV model’).

For each galaxy with position and observed redshift , we can calculate