Before the revision we have step 2 to do cross-validation using (5by2 sheets e.g. Split52yafeiOnlyParticipantID.xls) and produce the files of summary (five for three object method and five for one object method, e.g. YafeiOnlyoutput\_obj\_500\_01221.mat for three objects, YafeiOnlyoutput\_obj\_500\_021.mat for one object). This summary file can be read by step4 to get the performance of each model.

In the revision, we want to compare model performance for different groups.

Step13 was used to save location residuals to excel files ( the all sheet in residualLocationPID01221.xls for three objects or residualLocationPID021.xls for one object) as well as copy all original sheets. Step 13 was based on step 5 which did visualization but did not save the residuals to files.

Step 14 was used to analyze the residuals. First it used the location residual in all sheet to get averageFiveValidation sheet and then to get all residuals for each participant (saved to subjectRedisual). Second it used the location residual in averageFiveValidation sheet to get correlation between response and correct values (angles and length) (saved to subjectCorrelationAverageFive), so we can use this information to get compression information (e.g. compressionA, compressionD) for each participant (with 24 pairs for three objects and 8 pairs for one object) and separate them into different groups. There are a lot other important functions (like visualize the location, regression lines based on targets) to be listed later. The last function of it was to calculate the model performance based on the all sheet which should be similar to the summary result from step 4.

Step 15 was used to separate participants into different files, each with 5by2 sheets. We then saved each file to the fold of that group. The file of a group was processed by step2 to create summary files (see above). Step13 was then used to get the location residuals, which were saved in the all sheet (save above). Of course Step 14 can be used further to get further information (visualization) for that group. Similarly, after step 2, step 4 can be used to get the model information for that group.

Step 16 was the same as step 14 except that it first read the all sheets from different groups (participants) and get the location residuals based on the best parameters for individual groups. We can also calculate the model performance based on the residuals (in the all sheet) combined from different groups.

Step 17 was used to summarize/combine the model performance of different groups produced by step4. For example we did weighted average for rmse (weights are participants number in each group) and we sum the log likelihood values from different groups, which might be slightly different from that from step 16.

The subjectResidual sheet can be saved as .cvs for JASP. We can add group categories and check the interaction between category and models on model performance.

Step 25 (in the step 13 folder) we separated each location residuals file (residualLocationPID01221.xls for three objects or residualLocationPID021.xls for one object) to two files with categories and saved them to the subfolders. The results are in the all sheet. Then we just used step 14 above to get model performance for each subgroup.