Dissertation Summary (Discussion, Conclusions, and Future Work)

Notes:

* After taking points out there isn’t a noticeable difference between mean of MSE from cross validation without all points and score seismic constraints function which returns the MSE between the moho estimate and the point constraints for all the points.
* Andes problem should be able to be solved by modelling the subducting slab. The method of cross validation should in theory be very similar in an area without much tectonic activity when compared to South America e.g. Africa, model will just be better due to lack of deep moho. Crust1.0 no model of subducting slab either, but this method still has discrepancies with this. Deeper moho is less variation can be seen in model so leads to underestimation under Andes. Not just subduction zone that causes problems, only one density value that is being constrained for seismic models. Unlikely that estimate of one value will change. In Africa difference won’t be that large.
* Or if were still using south America instead of using a “random” selection for the training set in cross validation by taking say 2/3 of points out based on their geographical location (in blocks) try with Haas method not Uieda 2017.
* Adding in more degrees of freedom in density estimations, like the seismic regionalisation method used in Haas 2020 and this should decrease the mean errors between the model and seismic constraints. However issue arises with manually choosing how many different regions there will be given the exponential increase in computational time in accordance to increasing the number of regions with differing densities.

Summary:

The results attained from the procedure of cross validation indicate that there is not a noticeable difference between the mean of the errors when comparing all the different training sizes. This result is the same for both models with and without the added underplating of Mariani (2013) with variations in both being around 0.1km meaning that for this model the size of the testing set does not matter as all sizes above 2/3 of the data will arrive at the same conclusion. It is worth noting though that the model with the intrusion implemented has on average higher RMS values