Data Quality Review
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This is a quick summary of a few tests and comparisons performed to gauge the quality of the data I have accumulated and processed thus far. Following this quality review, sometime next week, I will email out the published histograms and maps which I hope to include in my AGU poster. This review has three short sections corresponding to three avenues of inquiry into the data quality I have made over the last few days.

Section 1: Third-party data comparison

I have plotted my data against data taken from paper *Precambrian crustal evolution: Seismic constraints from the Canadian Shield* by Thompson, Bastow, Snyder et al. (2010). Overall there is general agreement between the results with most of the points falling within the given error bounds. Several still show good correlation but are outside the error bounds. I had originally assigned a 1 sigma error estimate but it was immediately evident that this was too low so I resigned it to 2 * standard deviation. This appears to be closer in alignment with the error estimates in the Thompson et al. paper. My calculation uses a different method than that of Thompson et al. who base their method on that of Eaton et al. (2006).

My error estimates are calculated in a bootstrap approach after filtering the receiver functions for quality. The receiver functions are only chosen if the simultaneous deconvolution algorithm finds a parameter beta which minimizes a cross correlation function. If no beta is found within a given range I discard the resulting receiver function. The functions are then normalized and tested for impulsiveness by measuring and comparing peak heights with the worst offenders being discarded. The parameter gridsearch for Vp/Vs and H is performed 1024 times with randomly chosen data - permitting multiples - and 2 * the standard deviation from these runs in calculated.

Some of my earlier published histograms seemed to indicate lower Vp/Vs values than we expected for the Canadian Shield area and the comparison with the *Precambrian crustal evolution* data shows that this is indeed real. The comparison dataset actually has a slightly lower mean than the mean of my data, less than one percent, well within aggregate error.