ID: Type: **Poster**

4.1-P29. Understanding the Amplitudes of Seismic Signals and Station Noise

We have engaged in a multiyear effort to measure seismic amplitudes for regional phase (Pn, Pg, Sn, Lg) seismic amplitudes in order to accurately map out the attenuation structure of the lithosphere. Each phase has different sensitivity, allowing us to tomographically map out the Qp and Qs structure of the crust and upper mantle. We have already obtained attenuation models of Eurasia and North America, with the goal being the development of a high-resolution global lithospheric attenuation model. Using information on the earth's attenuation structure and combining this with source models, we can estimate the amplitudes expected to be observed by recording seismic stations. Coupled with noise estimates, we can map out station and network sensitivity, indicating which regions and what magnitude events we can hope to record. We can also use the attenuation model to correct for the observed variations in regional amplitudes and, hence, reduce the scatter in regional magnitude estimates, such as mb(Pn), mb(Lg) and Mw. This will allow us to have more confidence in single or sparse station regional magnitudes, which are common for smaller magnitude events.

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Track Classification: 4. Performance Optimization