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Using Seismic Amplitude Data to determine Crustal Seismic Attenuation Structure beneath China[1] THOMAS HEARN, New Mexico State Univeristy — Seismic amplitude data can be directly measured to look at regional attenuation. I used amplitude data from the dense China network that were originally collected for magnitude measurements. These measured amplitudes are generally from the Lg and Sg seismic phases and are dominated by shear-waves. Frequency dependent exponential models are used. The tomography problem inverts for regional geometric spreading, station gains, source corrections as well as the varying attenuation. Using the log-amplitude of the amplitudes linearizes the problem, corrects the non-Gaussian noise back to Gaussian, and gives images of higher quality than that obtained from travel time data. Results show grabens and basins have high attenuation with Q values near 100. Crystalline surface rocks typically show low attenuation with Q values near 1000. Low Q values along the edge of the Tibetan Plateau may be due to phase blockage occurring as a result of the rapid change in crustal thickness.

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