



## **Fault zone scattering properties from ambient noise cross correlations**

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Intrinsic absorption and scattering properties provide us with information about the heterogeneity of the Earth's crust. These properties are usually obtained by observing the energy decay of naturally occurring earthquakes and/or active shot records. The present study uses ambient noise cross-correlations to observe the coda quality factor ( $Q_c$ ) over a part of the North Anatolian Fault (NAF; Turkey). We estimate the  $Q_c$  values using ambient noise cross-correlations from 72 stations (DANA; [https://doi.org/10.7914/SN/YH\\_2012](https://doi.org/10.7914/SN/YH_2012)) in the frequency band 0.1 - 0.5 Hz. This is a highly faulted region with complex geological variations in both lateral and vertical direction. It results in a medium with strong scattering and considerably varying absorption properties. Our observations indicate lateral variations of scattering properties across this part of the NAF. To study these variations, we present a series of tests for a non-homogenous distribution of scattering properties computed with a Monte-Carlo model of radiative transfer (RT). We use RT coda sensitivity kernels in a linearized inversion scheme to map scattering properties around the NAF.