



2D coda attenuation analysis of active sources: the Rockall basin

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Passive seismic surveys are used for the evaluation of seismic attenuation parameters to characterise the Earth's lithosphere. Attenuation imaging is rarely applied to active datasets, attenuation being considered a hindrance than an efficient parameter when imaging reservoirs. In this study, we use one-component active source signals to study coda attenuation in the sub-basaltic North-Eastern Atlantic Margin, the Rockall Basin. Although this technique has been primarily used in volcanic and lithospheric environments, we apply it here to the oil and gas industrial setting. The Rockall Basin data consist of raw deghosted seismic lines from the Oil and Gas Authority of the UK 2015 seismic survey. The selected signals were band-passed filtered. A multiple scattering model was adopted, assuming dominant contributions from intrinsic absorption over scattering at large lapse times. The residual dependency of Q_c on the geometrical spreading factor was additionally investigated. The distribution of Q_c over a seismic line and its dependence on frequency were plotted, revealing high Q_c near a well in Rockall. The power law $Q_c = Q_0(f/f_0)^\gamma$ was used to express Q_c as a function of frequency.