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## Space-weighted seismic attenuation multi-frequency tomography at Deception Island volcano (Antarctica)

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Deception Island is the most active and documented volcano in the South Shetland Islands (Antarctica). Since its last eruption (1970) several experiments have targeted the reconstruction of its magmatic systems. Geophysical imaging has provided new insight into Deception's interior, particularly when using space-weighted seismic attenuation tomography for coda waves. Here, sensitivity kernels have been used to invert coda wave attenuation ( $Q_c^{-1}$ ). We obtain a multifrequency-dependent model of the magmatic systems at Deception Island using active data, paying particularly attention to data selection and model optimisation. The results have been framed in the extensive knowledge of the tectonics and the geomorphology of the volcano with a GIS, underlining a spatial correlation between high-attenuation anomalies and high thermal activity regions. This inter- and multi-disciplinary analysis improves the interpretation of the dynamics of Deception Island and its related hazards.