

# Supporting Information file for manuscript entitled

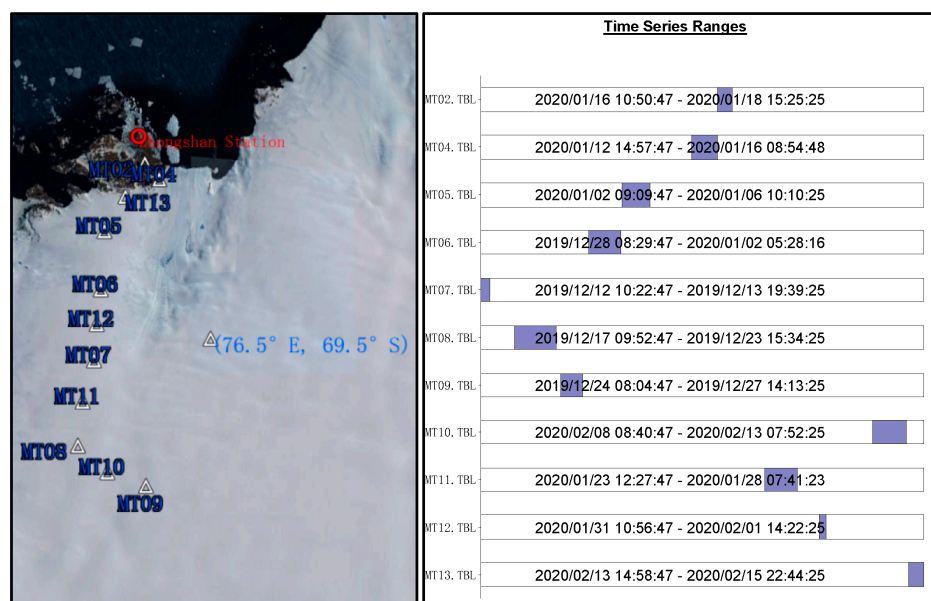
## “3D Interpretation of a Broadband Magnetotelluric Data Set

### Collected in the South of the Chinese Zhongshan Station at Prydz

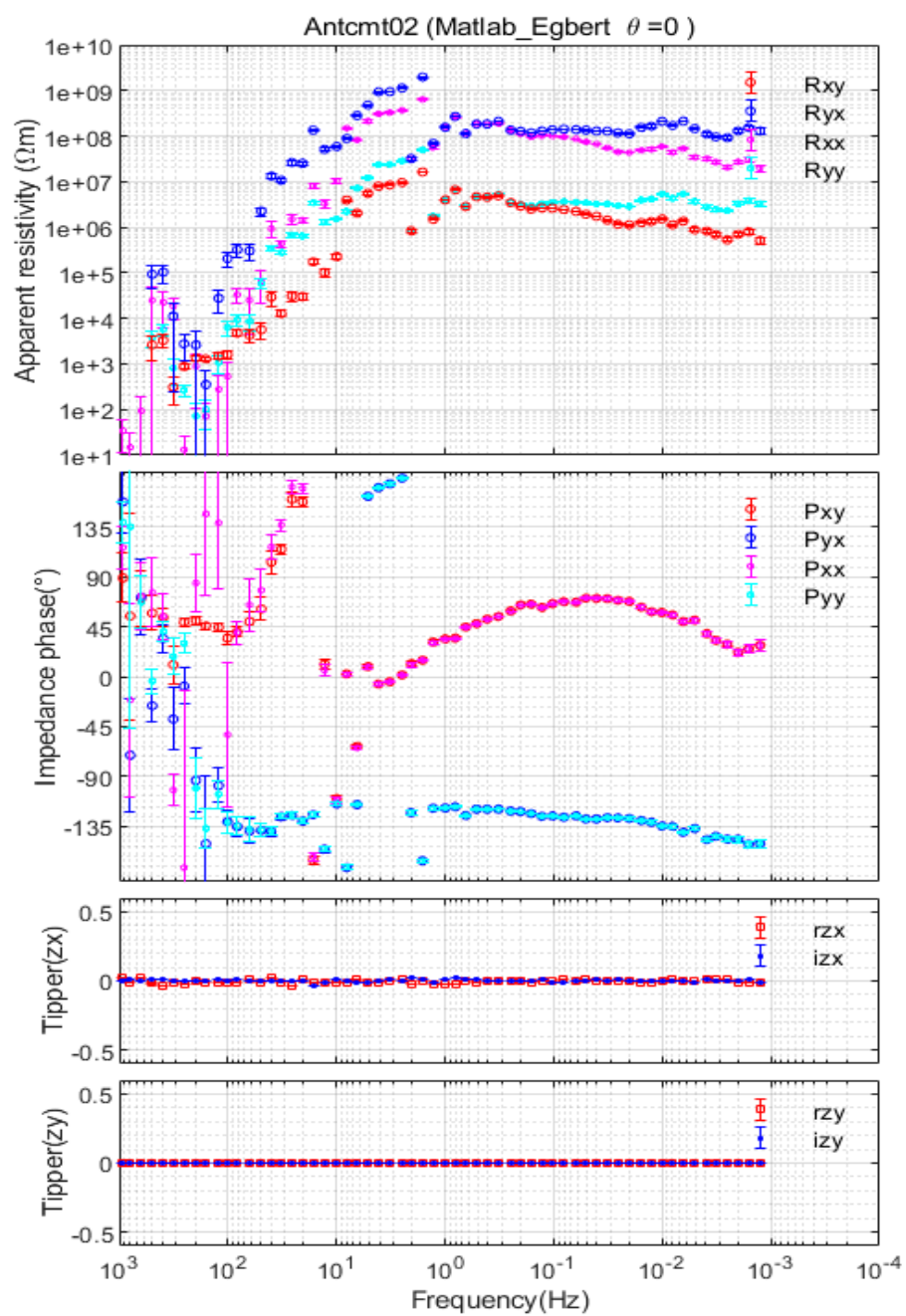
### Bay, East Antarctica”

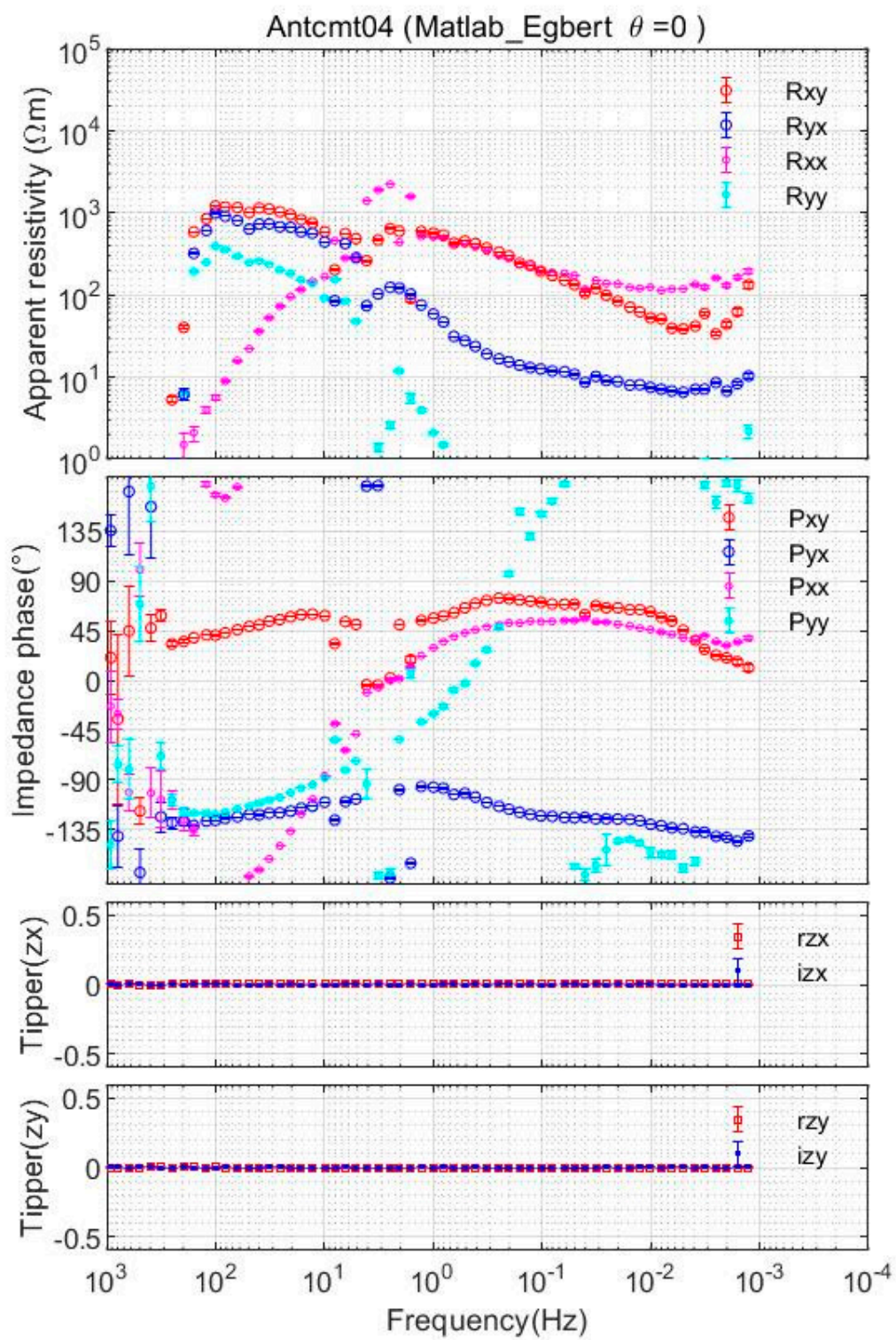
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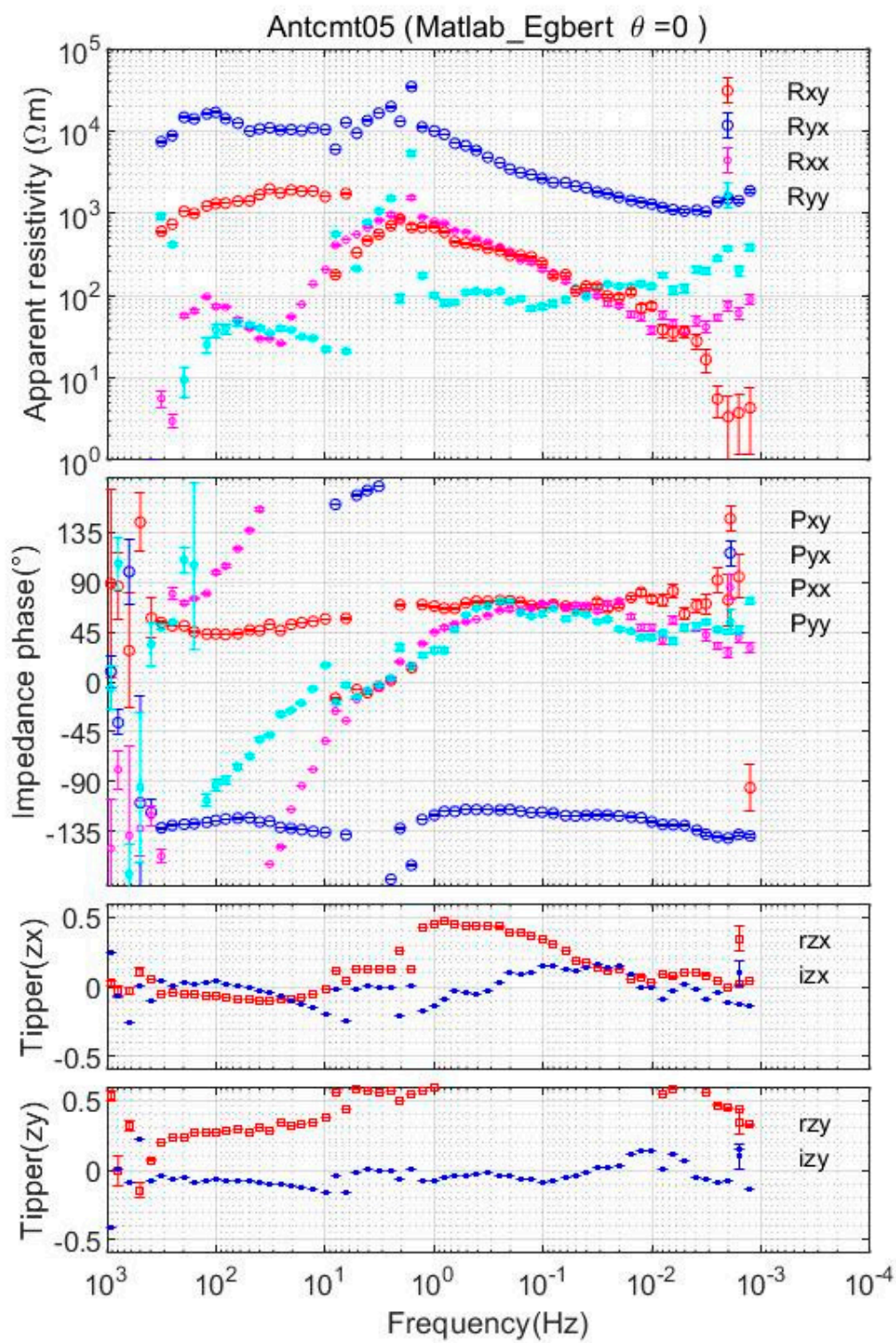


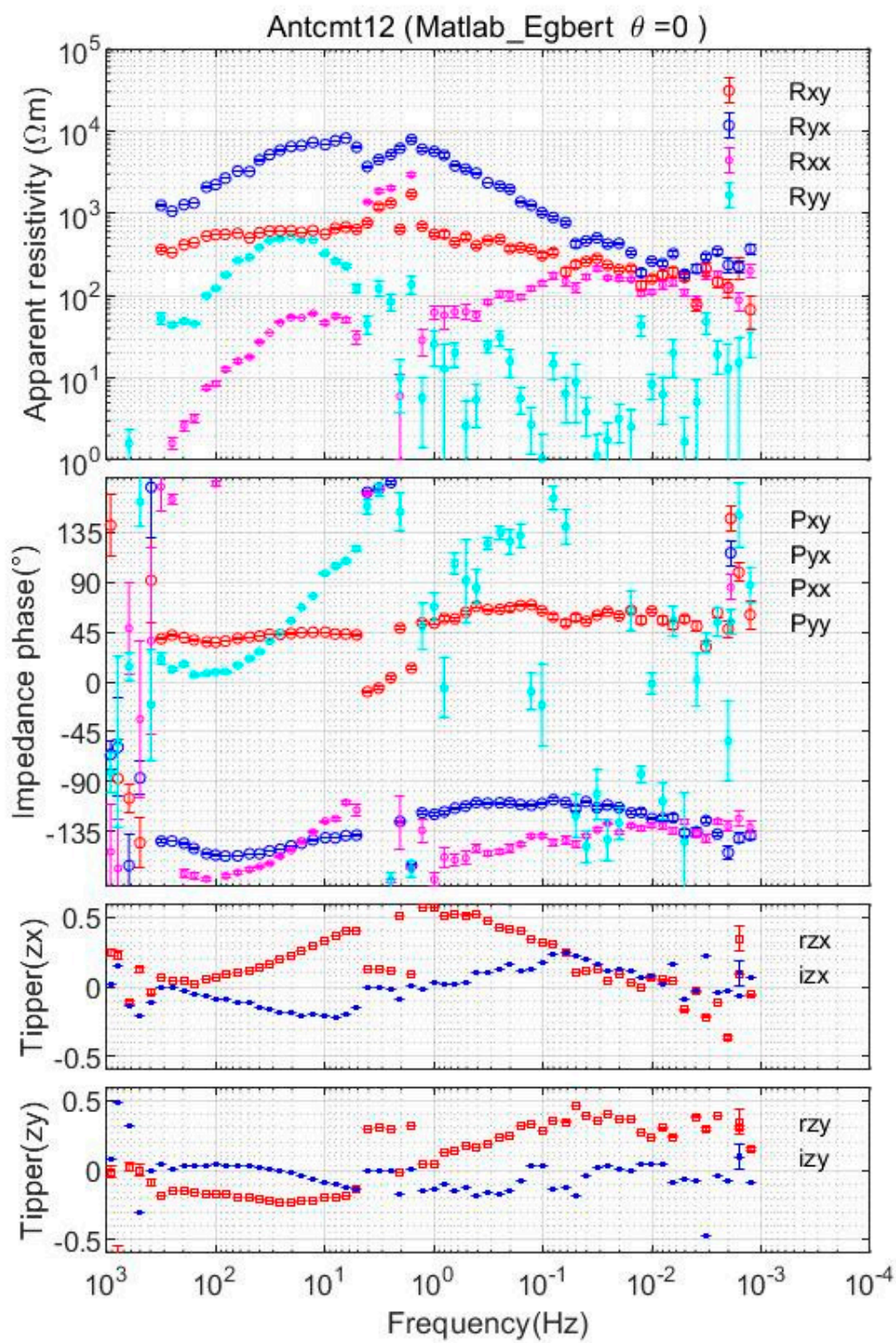
**Figure S1.** The occupation time of each site. In the left panel, a draft map shows the name and location of the MT sites which corresponds to the TBL files name in the figure in the right panel. PLEASE NOTE that the names of the station shown here are assigned during the field measurement which are NOT identical to the names labeled in the main manuscript.





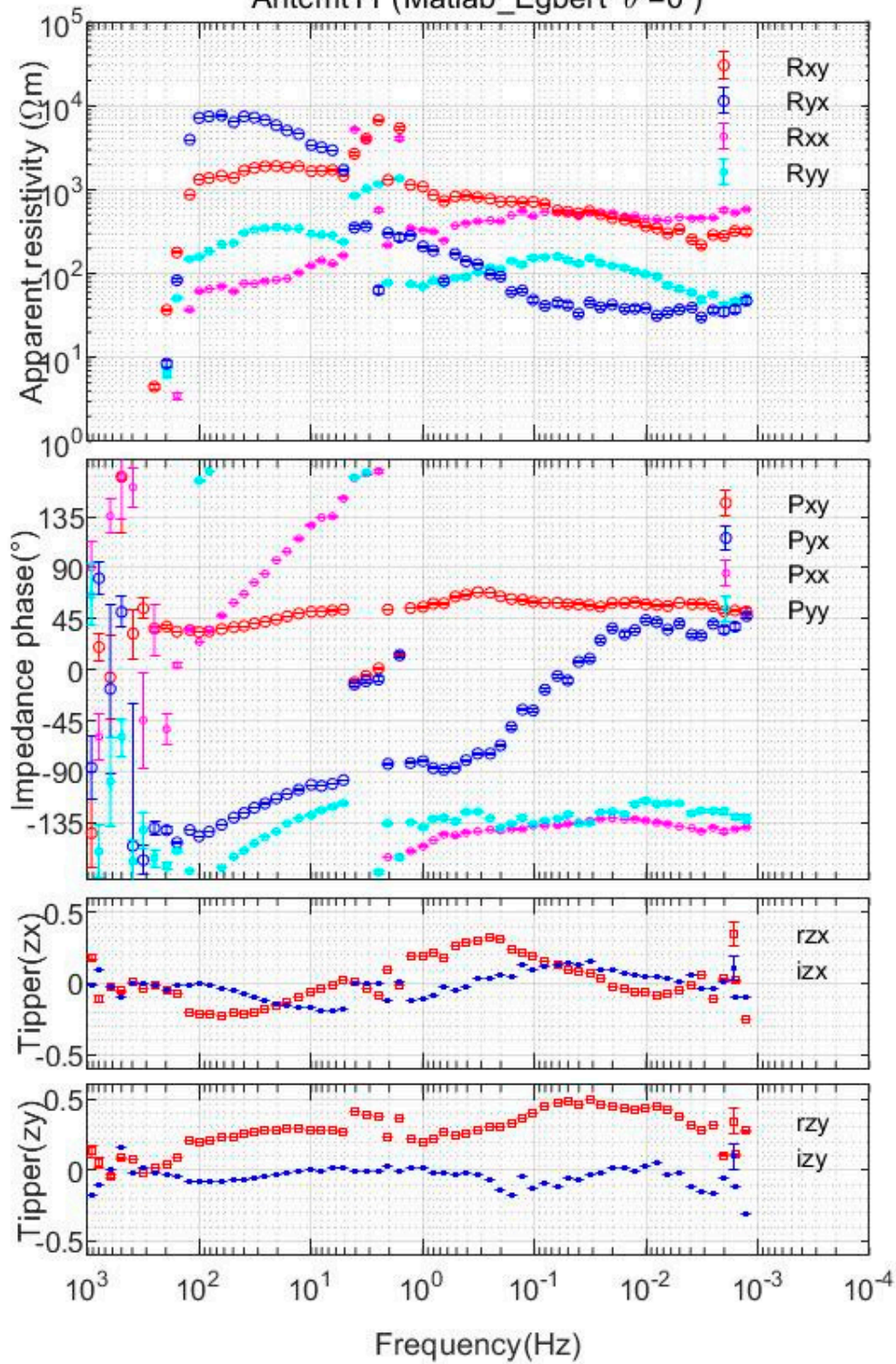


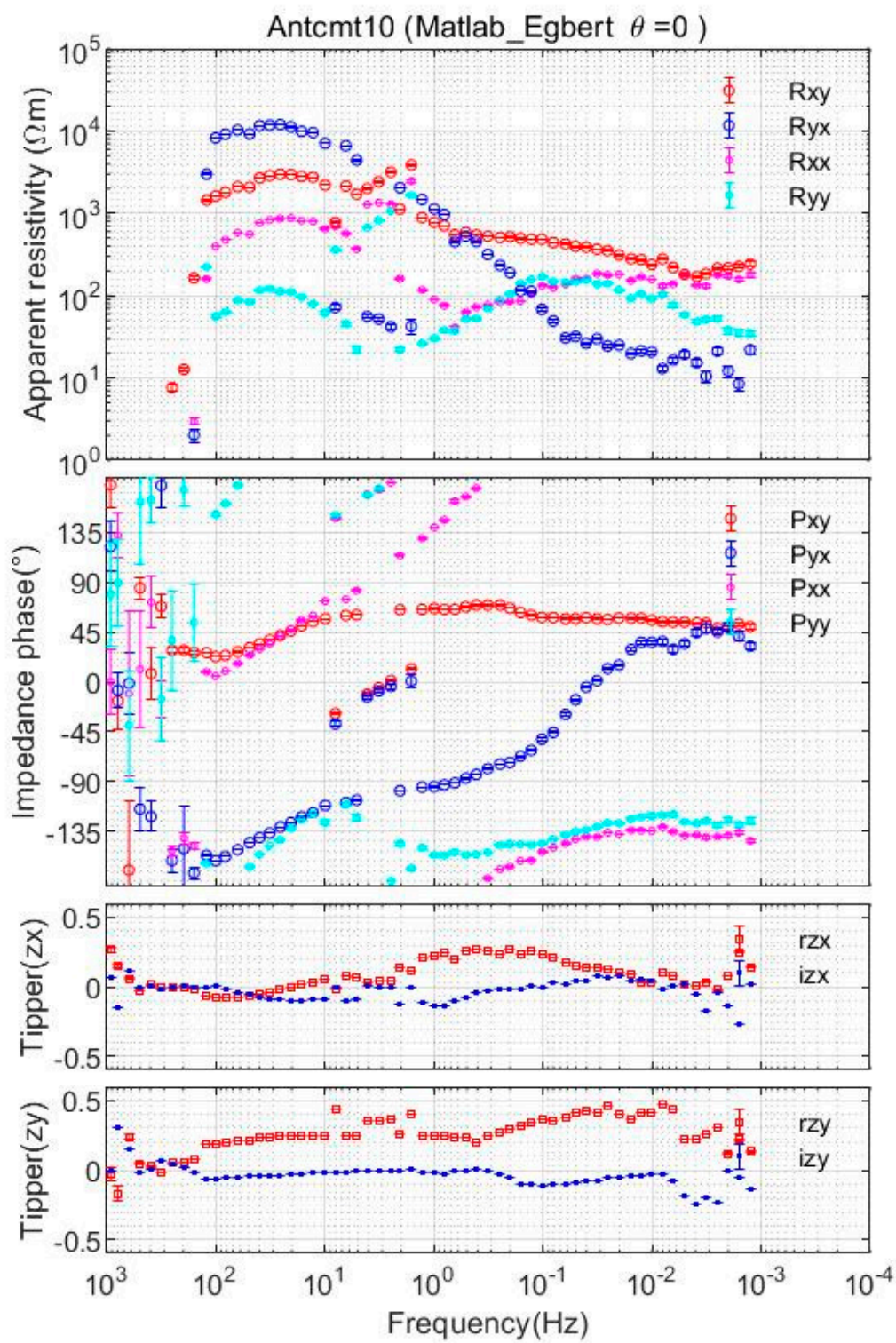




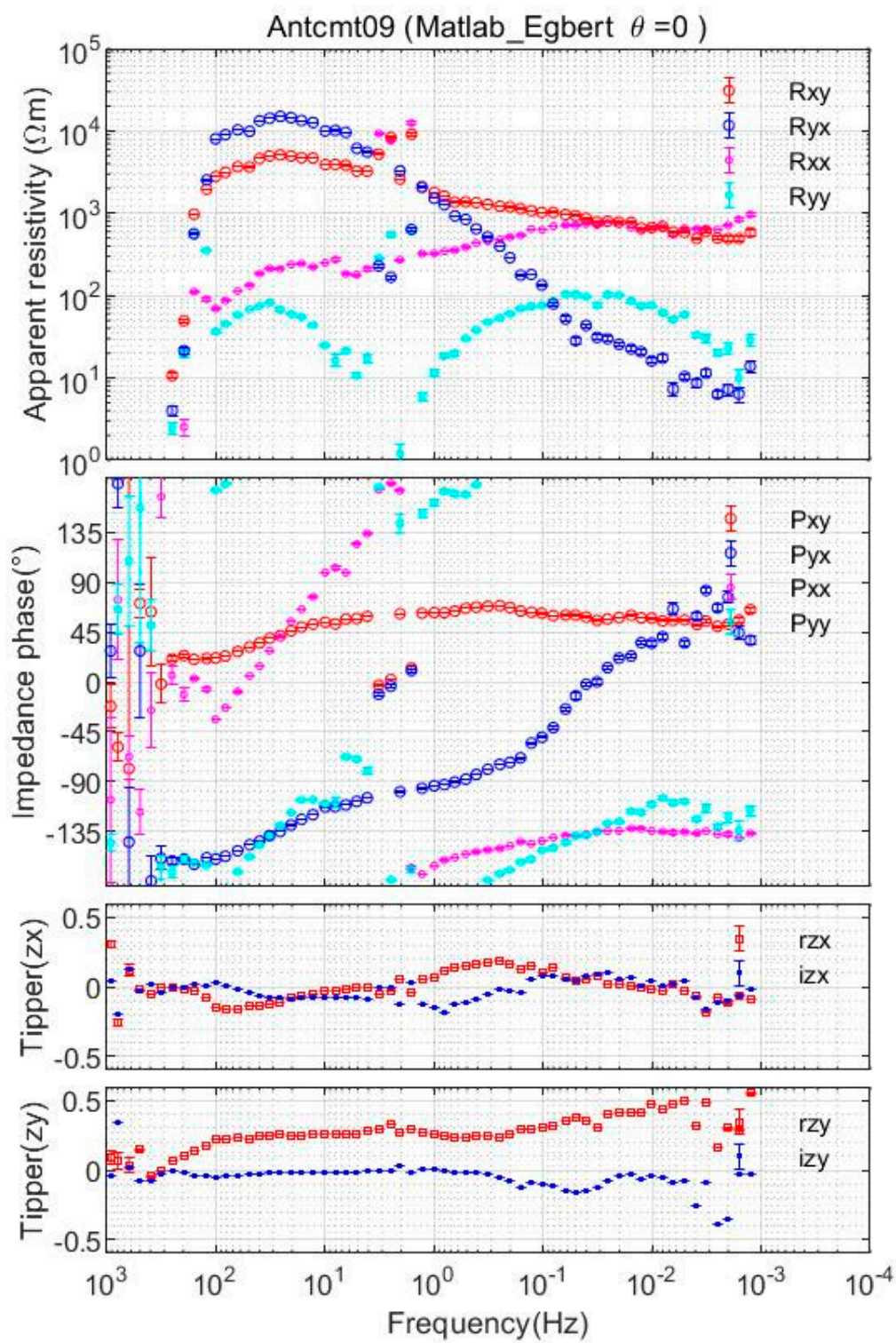


Antcmt11 (Matlab\_Egbert  $\theta = 0$ )

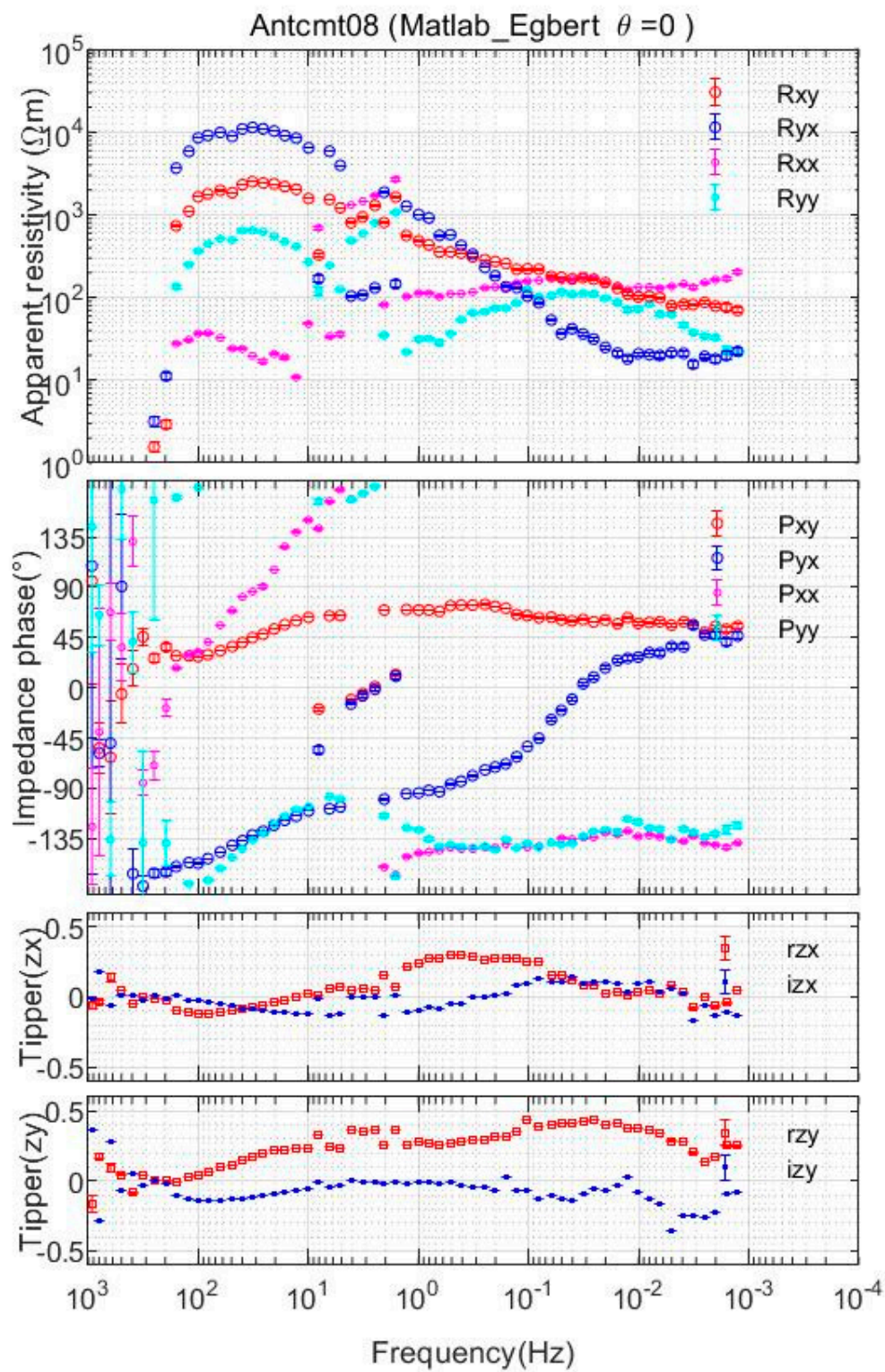


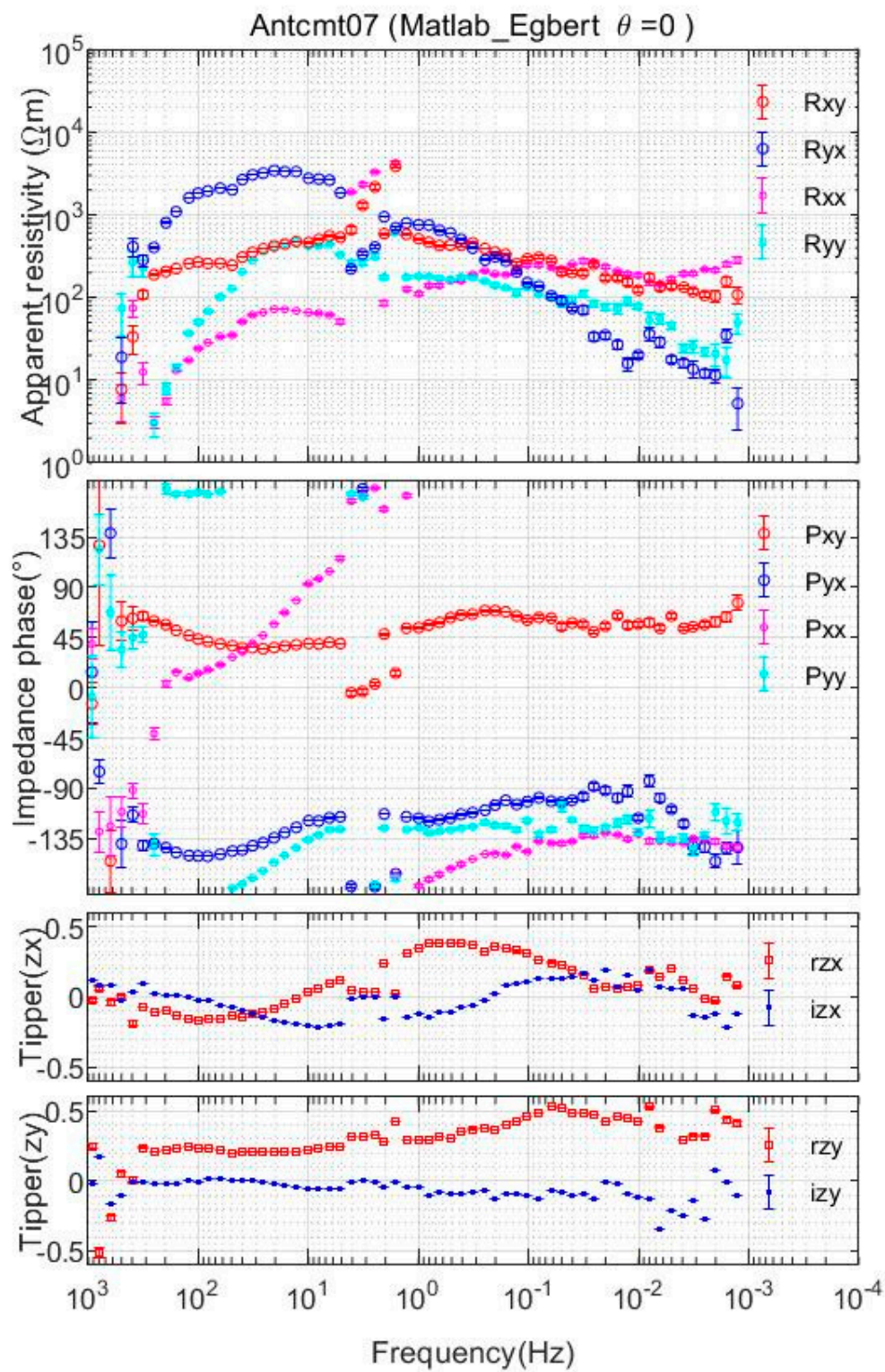




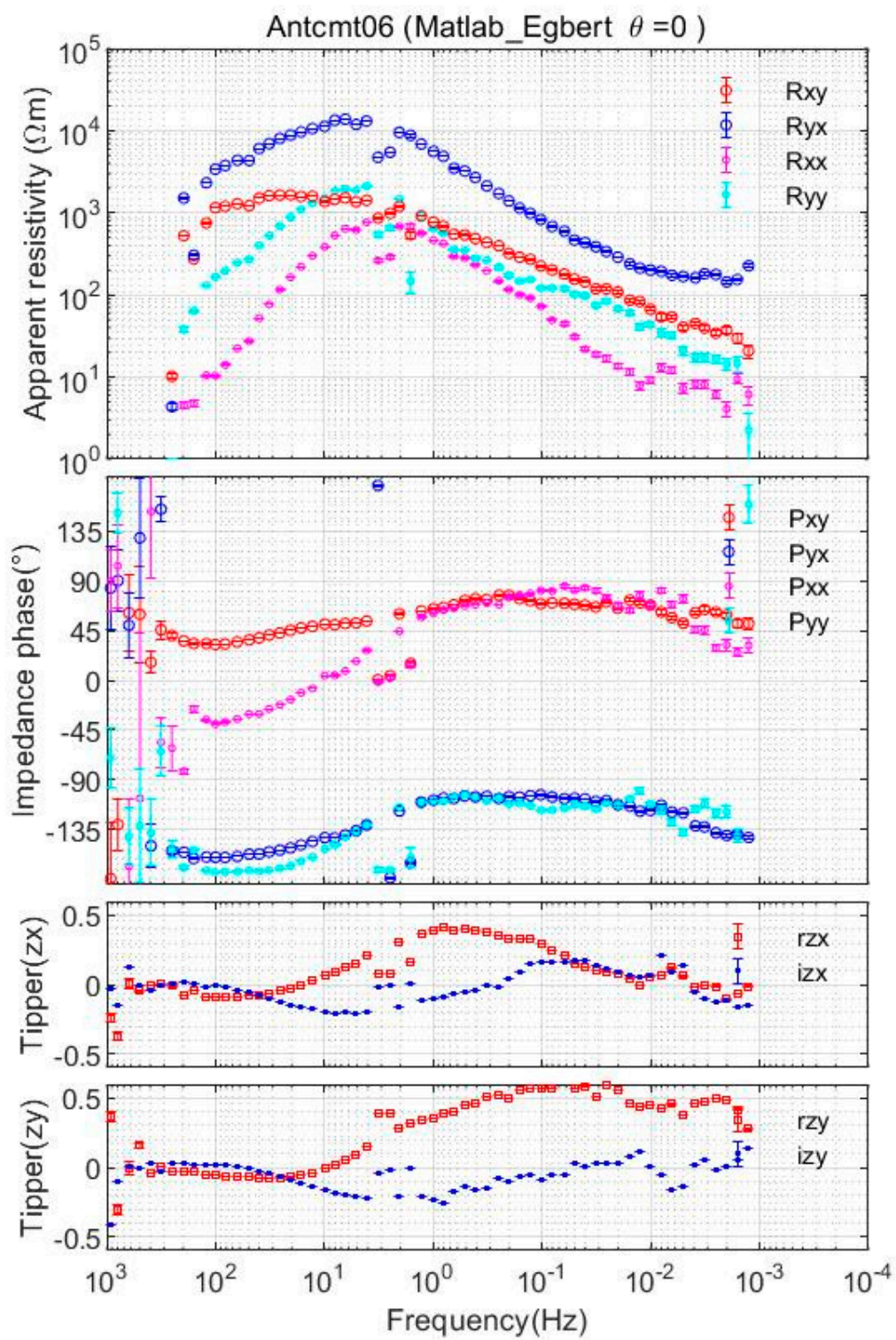


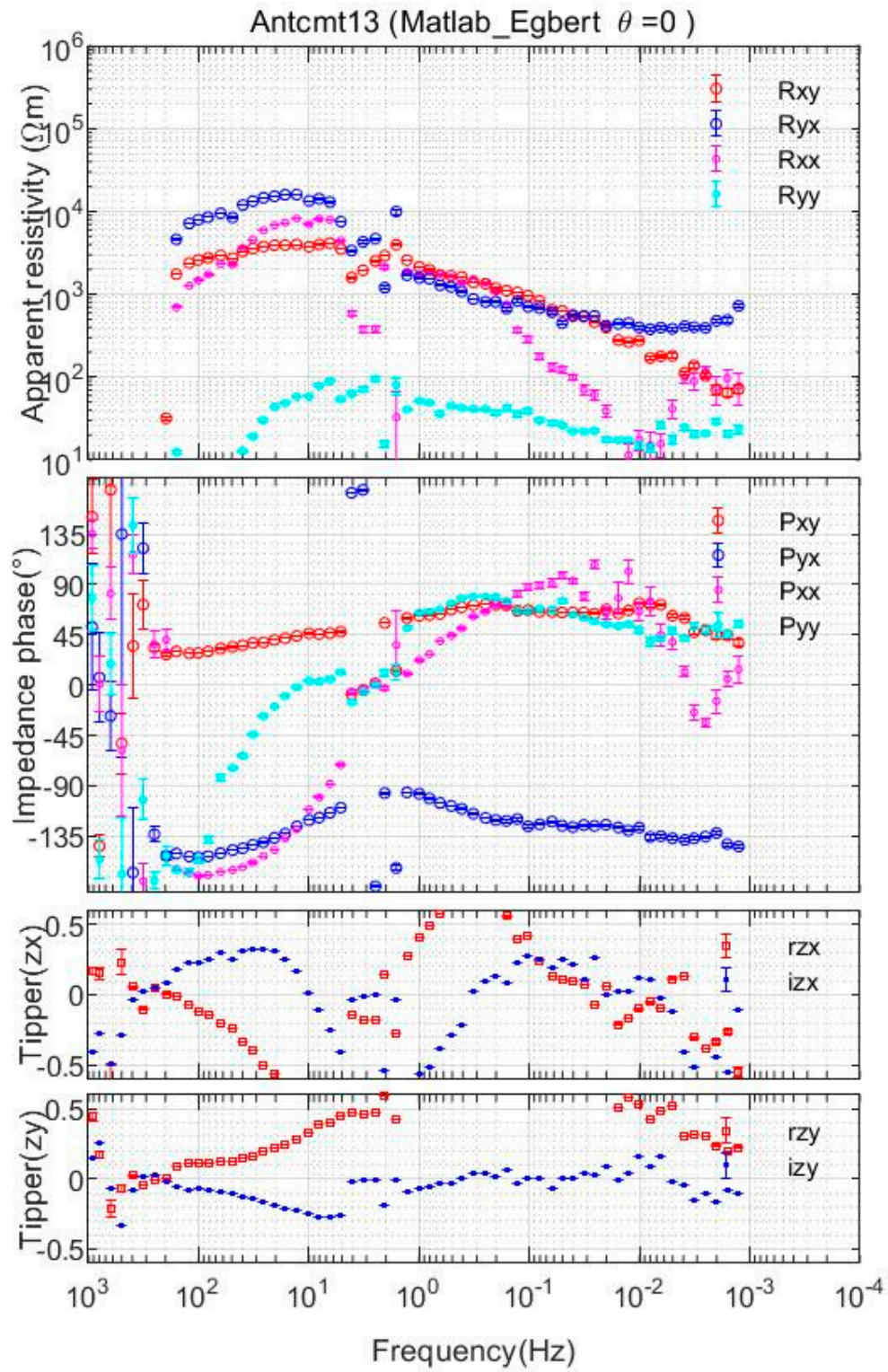






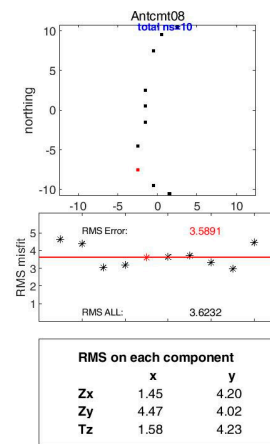
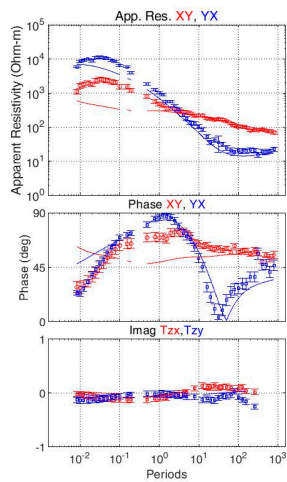
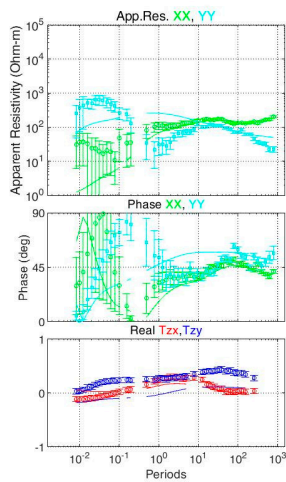
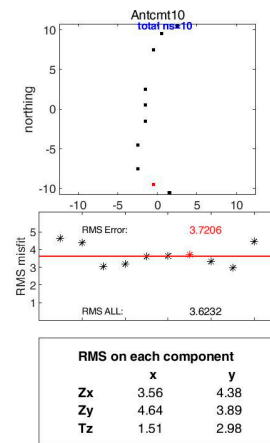
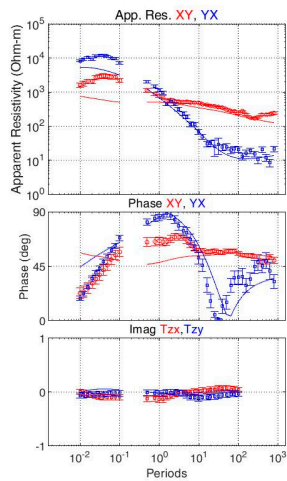
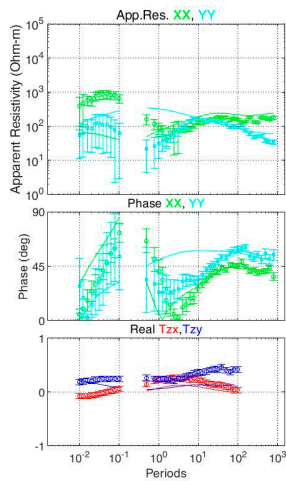
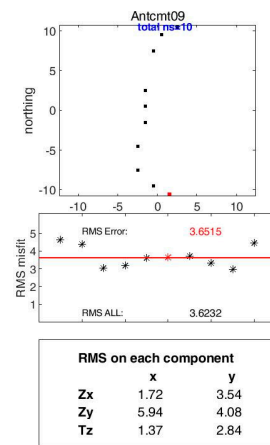
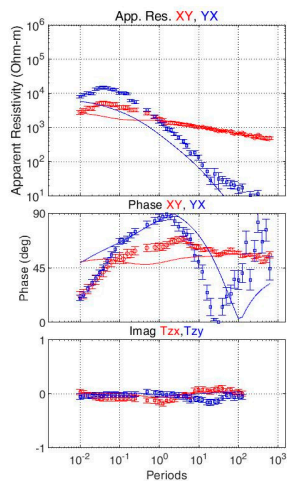
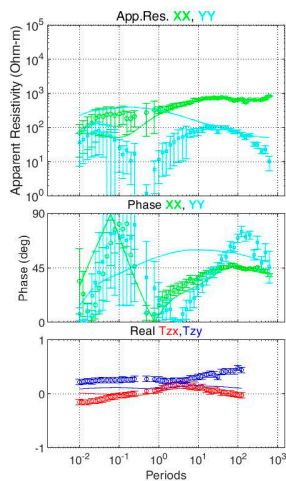


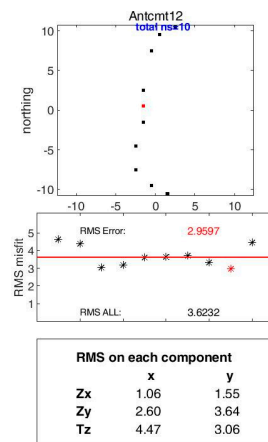
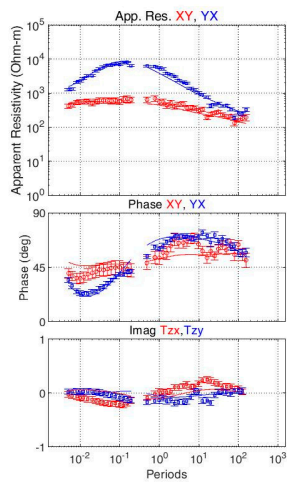
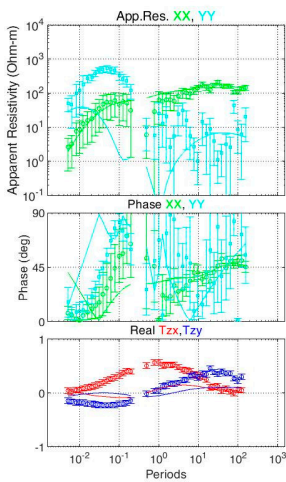
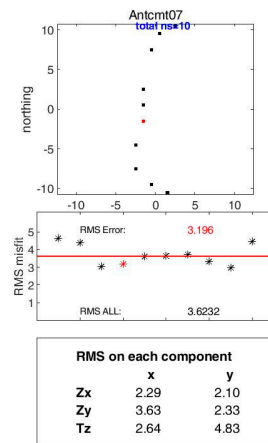
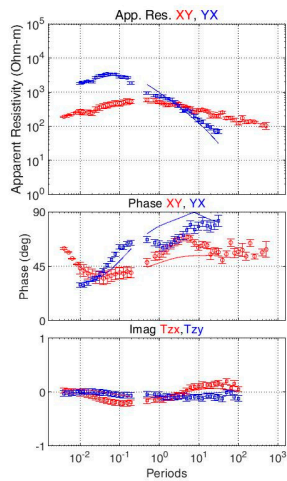
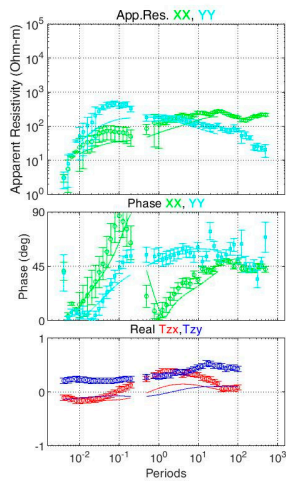
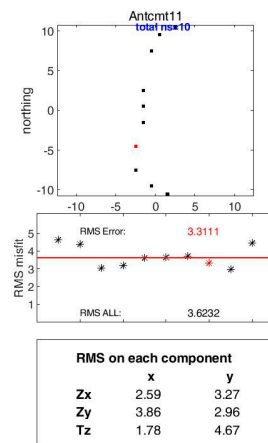
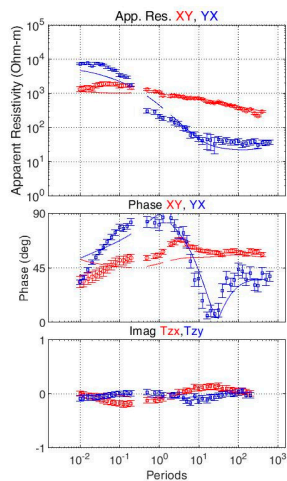
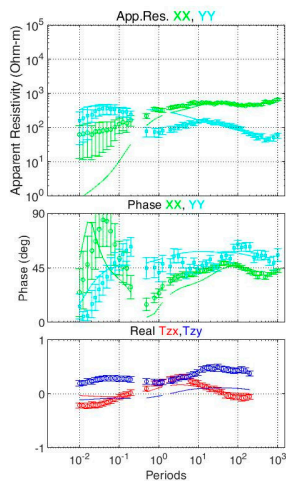




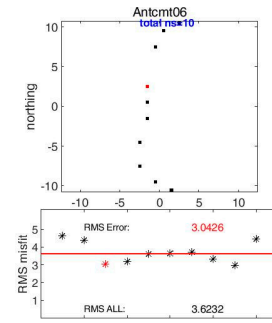
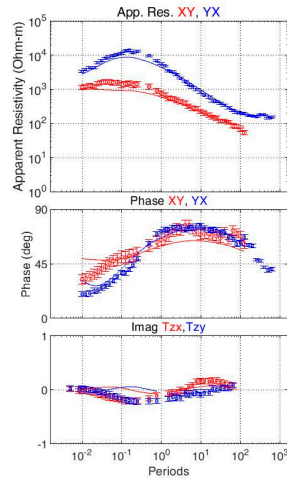
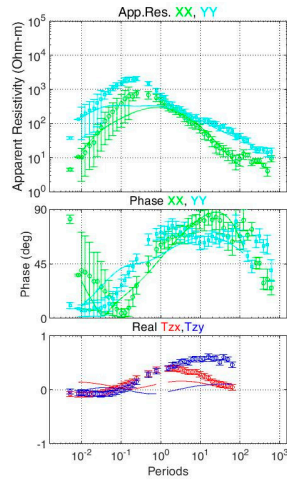
**Figure S2.** The original MT data without any edits are listed below. Note that Antcmt02 and Antcmt04 had not measured the vertical magnetic component.



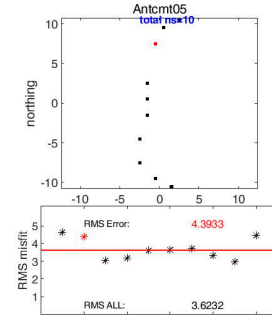
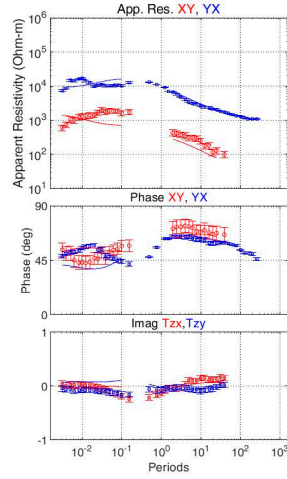
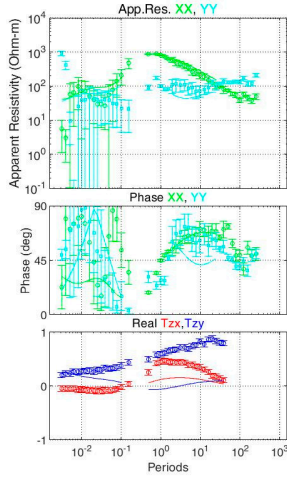




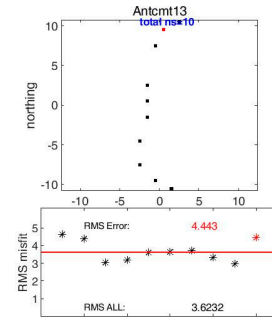
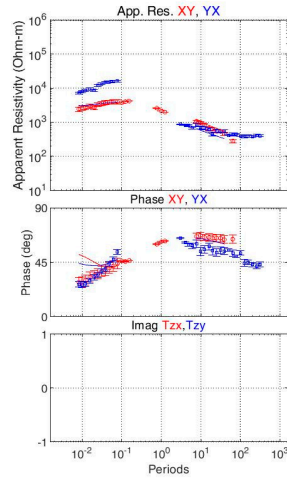
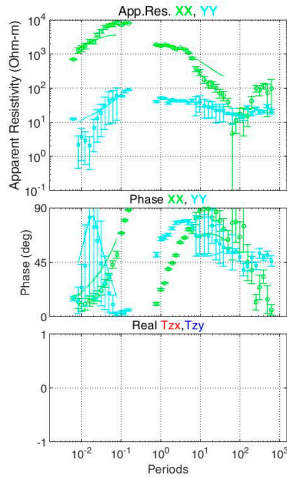




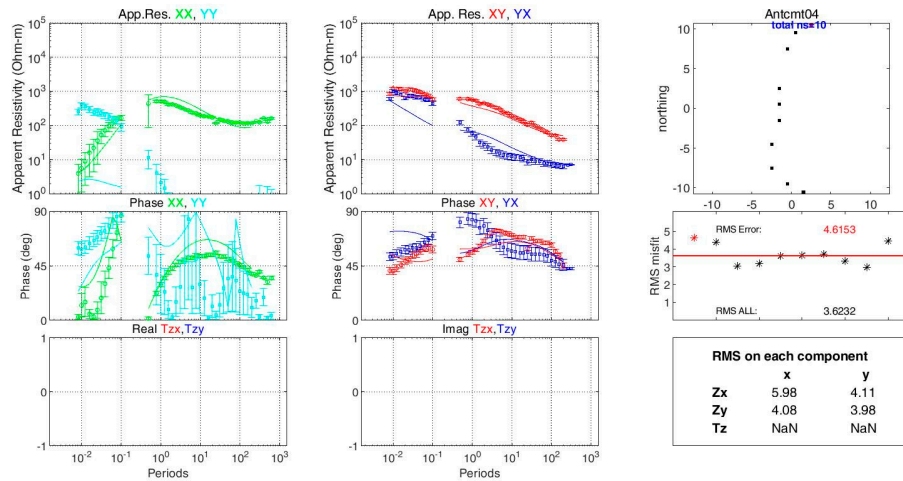
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	x	y
Zx	1.35	1.98
Zy	2.81	2.87
Tz	2.92	5.14



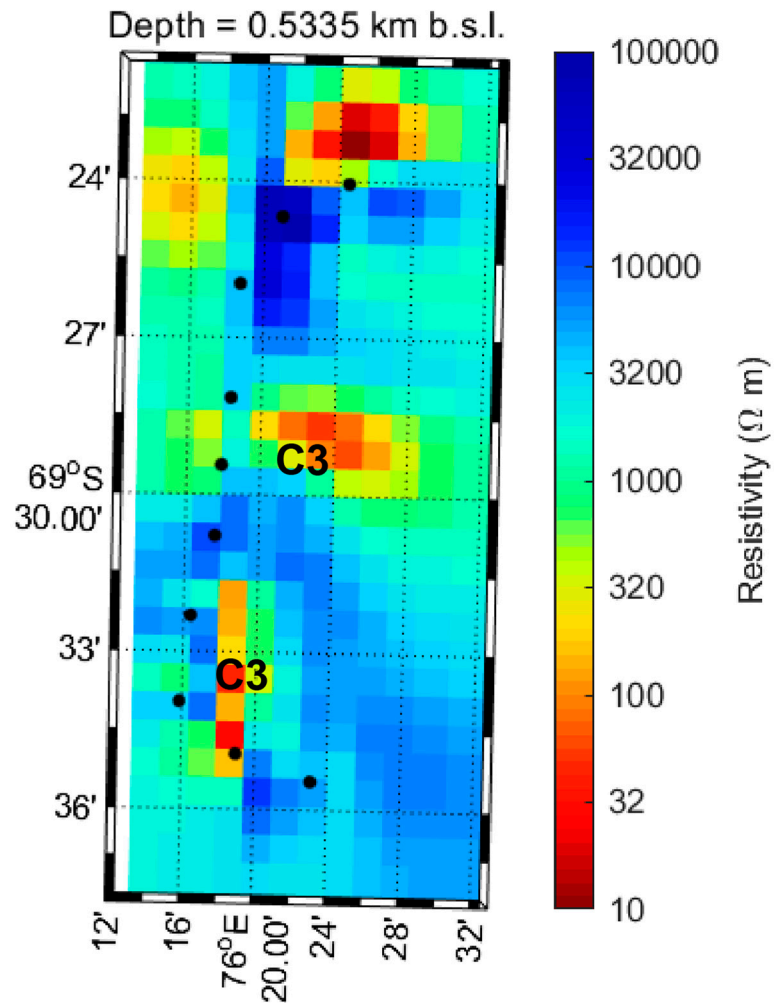
RMS on each component		
	x	y
Zx	2.21	2.41
Zy	5.12	2.81
Tz	2.77	7.61



RMS on each component		
	x	y
Zx	4.88	2.26
Zy	7.05	0.62
Tz	NaN	NaN

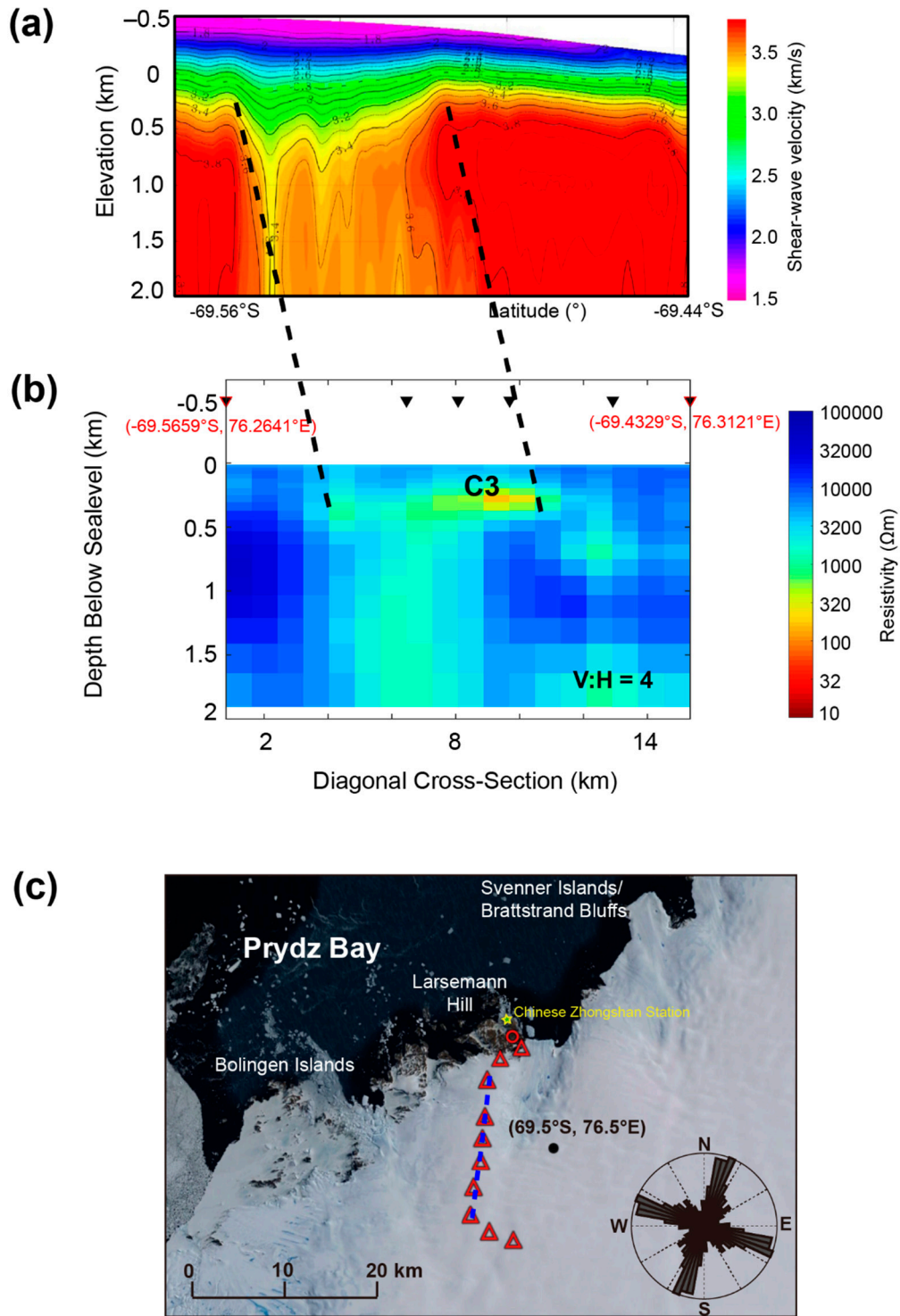


**Figure S3.** Comparison of the observations (dots) and the response curves (lines) from the preferred resistivity model. The r.m.s. misfits at each component and site were calculated and shown in these figures.



**Figure S4.** A horizontal slice at depth of about 0.5 km. C3 denotes a shallow low resistivity.





**Figure S5.** Comparison of the shear-wave velocity model (a) constrained by the Rayleigh-wave dispersion curves and the resistivity model (b) from 3D inversion of the broadband MT data. (a) This figure is modified from Fu et al. (2021). (b) The black triangles above the model indicate MT sites, the exact locations of two endpoints of the profile have been written in red color; the resistivity model was exaggerated in the vertical direction, the scale of vertical/horizontal equals to 4; two parallel dashed black lines indicated the coincide of the low velocities and the low resistivities. (c) The location of MT sites with red triangles and the profile corresponding to the vertical cross-sections in (a) and (b) is denoted by a dashed blue line; detailed information for figure (c) can be

found in the main text. Noted that the low velocity and low resistivity zones visually have similar geometry, but they are not matched in the lateral location even along an almost same cross-section.