YGS Open File 2022–7

Audiomagnetotelluric and broadband magnetotelluric data for geothermal exploration in the Burwash Landing area

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Front cover: Aerial view (looking north) of the Duke River where geothermal studies along the Denali fault are focused. Ruby Range in the background. Photo credit: Theron Finley, University of Victoria.

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Introduction

As Canada transitions to a low carbon economy, an increasing focus is being placed on the search for zero-emission, green energy sources. This is particularly important for sustainable development of Canada's North where many communities disconnected from the North American energy grid rely on fossil fuels (primarily diesel) for power generation and heat. Geothermal energy can provide base-lode power while emitting little carbon and requiring minimal physical infrastructure for development making it an attractive alternative energy source for the Arctic (Majorowicz and Grasby, 2014). In Yukon, although ~83% of electrical power is generated by hydro-electric plants (Yukon Bureau of Statistics, 2021a) and distributed to most communities via transmission lines, additional power requirements are provided by thermal generator burning diesel or liquefied natural gas and four communities are off-grid and relying primarily on fossil fuel for power generation. In addition, >56% of residential dwelling in Yukon rely on fossil fuels (oil or propane) for space heating (Yukon Bureau of Statistics, 2021b). Geothermal energy could potentially help reduce Yukon's reliance on fossil fuels and the Yukon Geological Survey is actively pursuing a geothermal energy research program not only for power generation but also for district heating, greenhouses and aquaculture. The Yukon Geological Survey has identified Burwash Landing, one of four off-grid Yukon communities, as a favourable environment for geothermal energy (Witter et al., 2018; Fraser et al., 2019; Witter, 2020). The Burwash Landing area is deemed prospective based on an estimated geothermal gradient of >40°C/km, local occurrences of warm groundwaters, and proximity to the active, crustal-scale, dextral strike-slip Denali fault (Witter et al., 2018; Witter, 2020; Elliott and Freymueller, 2020; McDermott et al., 2021).

The Yukon Geological Survey, in collaboration with the Geological Survey of Canada and university researchers, are trying to better understand the geothermal potential of Denali fault system in the Burwash Landing area (Relf, 2022). As part of this research, audiomagnetotelluric (AMT) and broadband magnetotelluric (BBMT) surveys were conducted in the Burwash Landing region in 2021 and 2022. Geophysical data offer invaluable insights on these types of potential blind geothermal systems (e.g. Craig et al., 2021) as they visualize the subsurface rock properties related to a rock's porosity or permeability either intrinsic to the rock itself or caused by faulting. Faulting can generate interconnected fracture networks facilitating fracture-dominated permeability along fault zones that can be important conduits for transporting warm hydrothermal fluids (Craig et al., 2021).

Data

This report distributes the 34 audiomagnetotelluric (AMT) and 46 broadband magnetotelluric (BBMT) stations collected in the Burwash Landing region, Yukon, by Quantec Geoscience Ltd. from October 8 to November 2, 2021. The technical report in Appendix 1 contains details of the acquisition process, processing and preliminary modelling products. The AMT and BBMT soundings are released here are as EDI files (Appendix 2), 2D modelling products are released as GDB, GRD, and XYZ files (Appendix 3), and 3D modelling products are released as GDB, VOXEL and XYZ files (Appendix 4). Geographic positioning of AMT and BBMT stations and electrodes are provided in GDB and CSV formats (Appendix 5). The products released herein were provided by Quantec Geoscience Ltd. The final preferred 3D inversion model incorporating extremely low frequency electromagnetic (Witter, 2020), AMT and BBMT data, as well as details of that 3D modelling process can be found in Tschirhart et al. (2022).

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Appendix 1

Logistics Report for a SPARTAN MT survey in the Burwash Landing area.

LOGISTICS REPORT FOR A

SPARTAN MT SURVEY

OVER THE

YUKON MT PROJECT

(YUKON TERRITORY, CANADA)

ON BEHALF OF THE

YUKON GEOLOGICAL SURVEY

SPARTAN MT

November 30, 2021

CA01281S

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QUANTEC Geoscience

Report Disclaimer:

Quantec Geoscience Limited holds a Certificate of Authorization from the Association of Professional Geoscientists of Ontario (PGO) to perform the work presented in this report. Quantec employed qualified professionals to carry out the work presented in this geophysical report.

Statements made in this report represent opinions that consider information available at the time of writing. Although every effort has been made to ensure the accuracy of the material contained in this report, complete certainty cannot be guaranteed due to the interpretive nature of the work which may include mathematically derived solutions that are inherently non-unique. Therefore, the estimated physical parameters of the subsurface may have no direct relation to the real geology and possible economic value of any mineralization.

There is no guarantee or representation to the user as to the level of accuracy, currency, suitability, completeness, usefulness, or reliability of this information for any purpose. Therefore, decisions made based on this work are solely the responsibility of the end user. It is incumbent upon the end user to examine the data and results delivered and make Quantec aware of any perceived deficiencies.

EXECUTIVE SUMMARY

This report presents the logistics of the SPARTAN MT survey completed from October 8, 2021, to November 2, 2021 over the Yukon MT Project by Quantec Geoscience Ltd. on behalf of the Yukon Geological Survey.

The report describes the instrumentation, data acquisition and processing procedures, final data formats and contents of the digital archives. The final processed data are also presented as Magnetotelluric (MT) sounding curves of apparent resistivity, phase, and Tipper.

A total of 83 MT sites were surveyed. Data were processed and inspected for quality assurance on site and reviewed daily by the geophysicist in charge of the project. Technical and quality control assistance for the project was provided by the Geological Survey of Canada.

The final processed survey results delivered with this report include:

- Magnetotelluric (MT) Data
    - Single site data in the Electrical Data Interchange (EDI) format containing the MT spectra at each frequency.
- Positioning data in .CSV and Geosoft .GDB format.

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1. INTRODUCTION

This report presents the logistics of the SPARTAN MT survey completed from October 8, 2021, to November 2, 2021 over the Yukon MT Project by Quantec Geoscience Ltd. on behalf of the Yukon Geological Survey.

1.1. CLIENT INFORMATION

Name:	Yukon Geological Survey
Address:	91807 Alaska Highway Whitehorse, YT Y1A 0R3 Canada
Representative (YGS):	Maurice Colpron Phone: +1-867-667-8235 Email: Maurice.Colpron@yukon.ca
Representative (GSC):	Jim Craven Phone: +1-613-996-9935 Email: jim.craven@NRCan-RNCan.gc.ca

1.2. GENERAL PROJECT INFORMATION

Quantec Project Manager:	Mark Morrison
Quantec Project Number:	CA01281S
Report Prepared by:	Sam Edwards, Darcy McGill
Project Name:	Yukon MT Project
Survey Type:	SPARTAN MT
General Location:	AMT Grid approximately 5 km West of Burwash Landing, MT Line runs from north of Quill Creek to East of Haines Junction (see Figure 1-1). Lat /Long: 61°21'58" N, 139°06'12" W UTM: 601390 E, 6805026 N Datum: NAD83, UTM Zone 7N
Survey Period:	October 8, 2021, to November 2, 2021

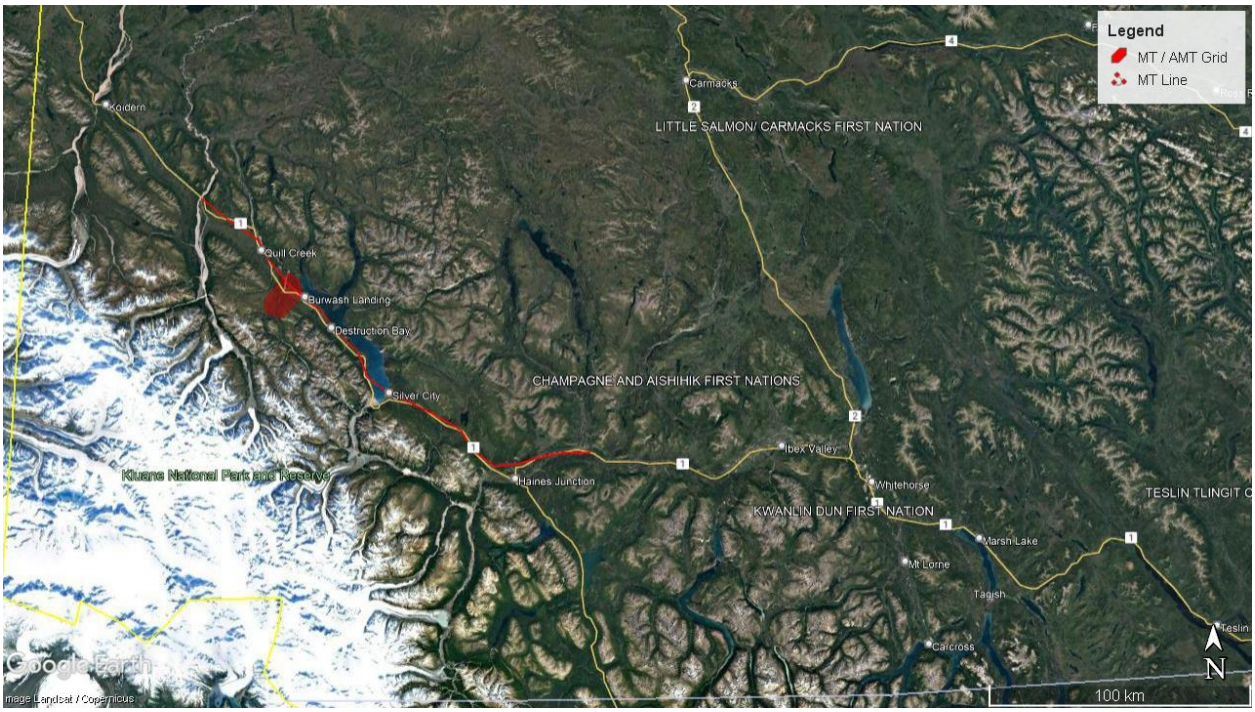


Figure 1-1: General location map.

2. SURVEY LOGISTICS

2.1. ACCESS

Base of Operations:	Talbot Arm Motel, Destruction Bay
Mode of Access:	Truck and UTV.

2.2. GRID AREA

Established by:	Quantec, approved by client prior to survey execution
Grid Coordinate Reference System:	UTM coordinates
Datum and Projection:	WGS 84, UTM Zone 7N
Grid Azimuth:	Grid N is 0° True
Magnetic Declination:	18°E
Site Location:	Handheld GPS, Electrode locations marked using Hemisphere GPS.

2.3. PRODUCTION SUMMARY

Details of Survey Production:	See APPENDIX A
Survey Period (Total):	From October 8, 2021, to November 2, 2021 25 days
Survey Days (Read Time):	22 days
Standby:	2 days
Fatigue Days:	1 day

2.4. SURVEY COVERAGE SUMMARY

Details of Survey Coverage:	See APPENDIX B
<u>AMT/MT Survey:</u>	
Sites Acquired:	83 sites 123 EDI files delivered (one per MT site (49) and two per AMT site (74); 3 sites, “BBMTXX” had both MT and AMT data at the same site)

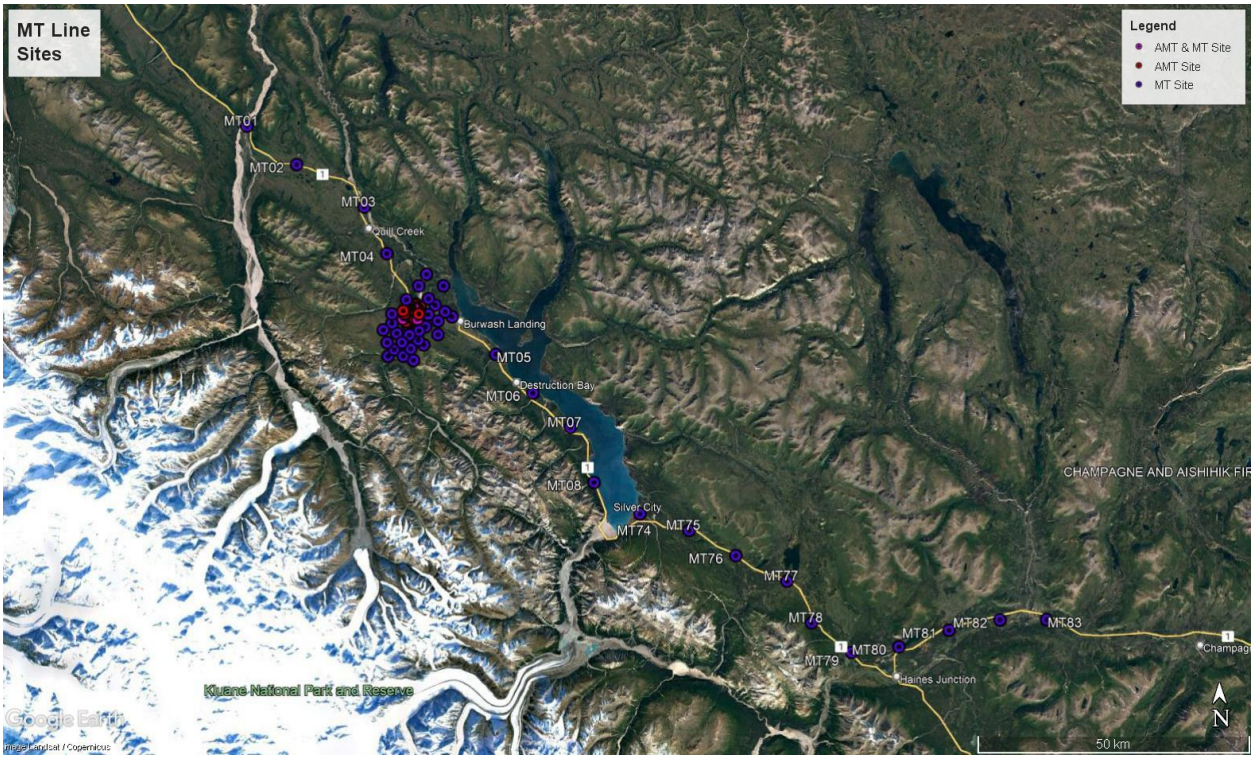


Figure 2-1: MT survey coverage map – Full view (MT line sites).

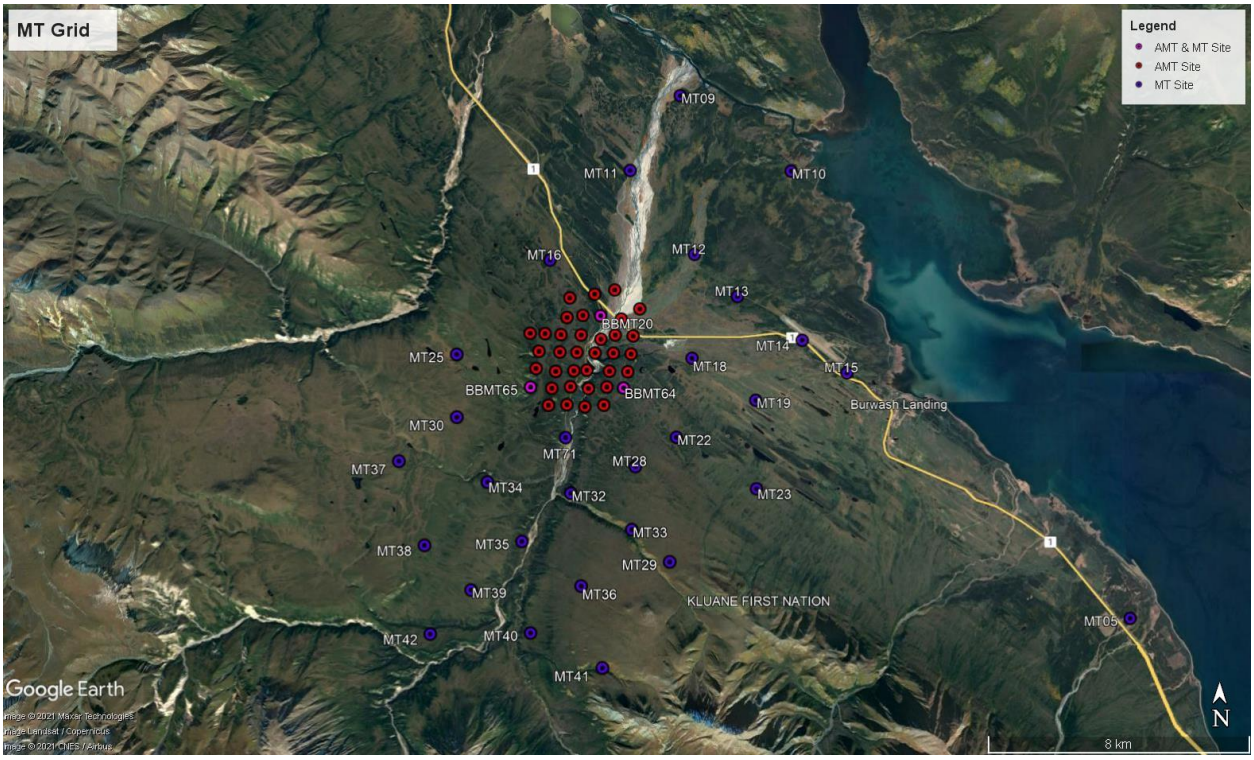


Figure 2-2: MT survey coverage map – MT grid.

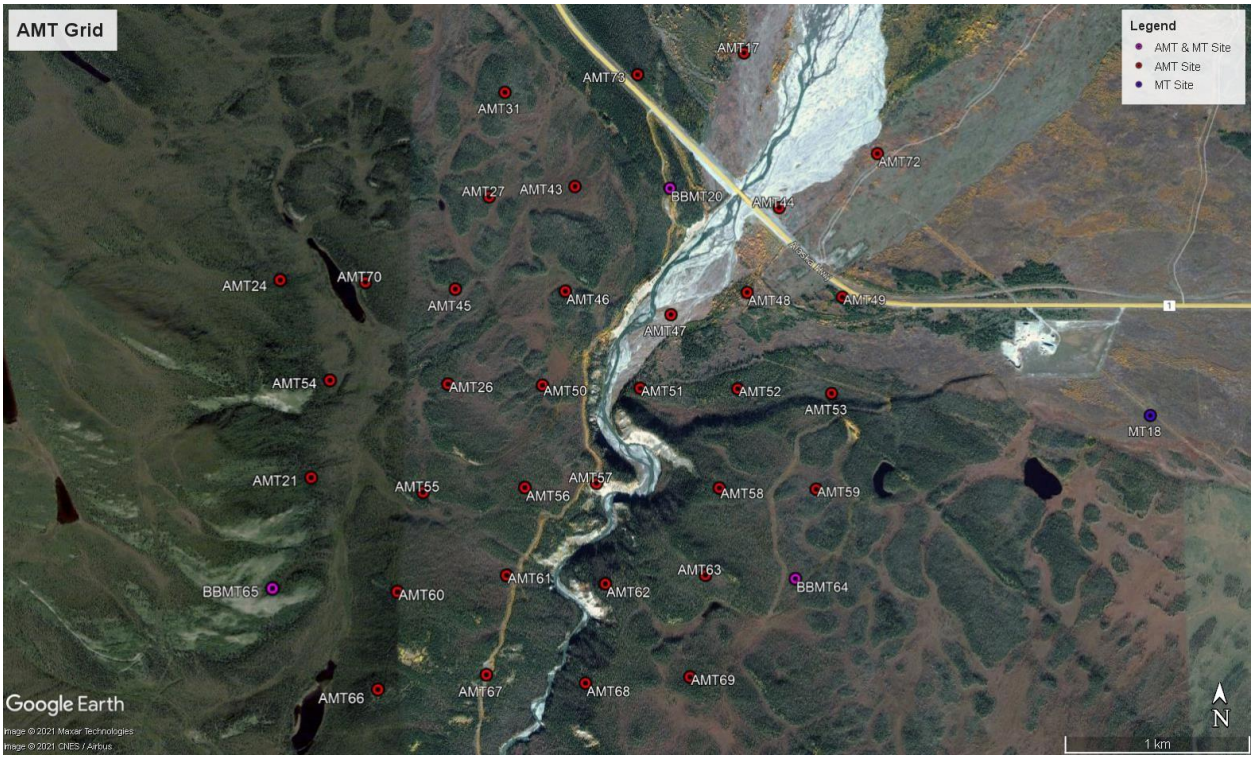


Figure 2-3: MT survey coverage map – AMT grid.

2.5. Quantec Personnel

Project Manager:	Mark Morrison
Field Operations Manager:	Andrew Casson
Project Geophysicist:	Darcy McGill
Field HSE Coordinator:	Jordan Sampson
Field Data Processor:	Sam Edwards
System Operator:	Rodney Renaud
Field Technicians:	Alex Marino Rajan Naran Jordan Reelis

2.6. Health, Safety, and Environment (HSE)

Quantec Geoscience is committed to conducting its activities in a manner that will safeguard and protect the health and safety of all Quantec personnel, clients, the public and the environment.

2.6.1.Hazard Assessment and Control

Prior to mobilization, Quantec HSE compiled a hazard inventory for the project and risk assessments were completed for the tasks involved in conducting the work. On the basis of the risk assessments, corresponding Job Safety Analyses (JSA) were prepared defining safe work procedures.

2.6.2.Systems and Procedures

All personnel were equipped with any personal protective equipment (PPE) required for the work.

One Quantec crew member was assigned as an HSE coordinator to assist the Field Manager with implementation of HSE procedures and reporting.

Daily safety meetings of Quantec personnel were conducted each morning prior to commencement of work to review safe work procedures and discuss any prior incidents, daily plans and potential hazards.

Vehicle circle checks were completed by drivers before departure.

2.6.3.Training

2 new hires from Quantec were trained on the operation of MT surveys on this project.

2.6.4.Reporting

Daily reports were sent by email to both Quantec and the client representative, including:

- Daily operations plan for each acquisition team.
- Incident Reports if required.

3. SURVEY SPECIFICATIONS

3.1. INSTRUMENTATION

Receiver System:	RT160Q Quantec data logger
Synchronisation:	GPS clock (10 ns precision)
Receiver Electrodes:	Steel plates (AMT) / Phoenix PE5 $PbCl_2$ porous pots (MT)
Magnetic Sensors [HF]:	Geometrics G100K magnetic field sensors EMI BF6 magnetic field sensors
Magnetic Sensors [LF]:	Phoenix MTC50 magnetic field sensors Phoenix MTC80 magnetic field sensors

See APPENDIX G for more detailed information.

3.2. SURVEY LAYOUT

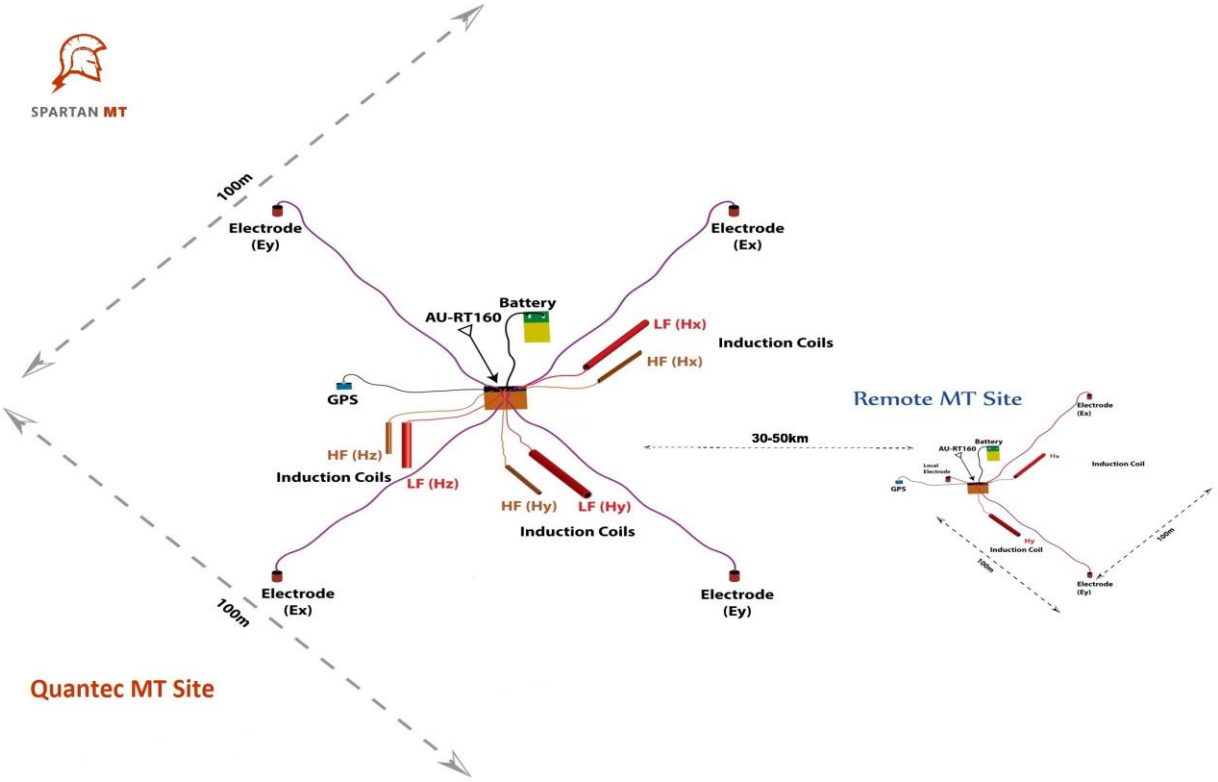


Figure 3-1: Survey acquisition layout showing full-frequency setup. AMT sites used only HF coils; MT sites used only LF coils.

3.3. MAGNETOTELLURIC SURVEY PARAMETERS

3.3.1.Geometry

Technique:	Tensor magnetotelluric soundings processed with remote reference.
Site Configuration:	Cross-shaped E-field with HF and/or LF magnetic sensors located at each site.
E-field Dipole Lengths:	Ex: 100 m Ey: 100 m
Site Orientation:	Acquisition layout with X pointing to 0° True.
Remote Site Configuration:	L-shaped E-fields with HF and LF magnetic sensors located at the site. The sensors are oriented in the same direction as the local sites.
Remote Reference Position:	585380E, 6819363N (NAD83, UTM Zone 7N)
Synchronization to Remote:	GPS clock (10 ns precision)

3.3.2.Acquisition and Processing Parameters

Data Acquisition:	Time series recording.
Time Series Sampling:	HF1: 48,000 samples/s HF2: 12,000 samples/s LF1: 2,000 samples/s LF2: 40 samples/s (resampled from LF1)
Time Series Recording Time:	HF1: minimum 2 events @ 30 s per event HF2: minimum 3 events @ 4 minutes per event LF1: at least 2 events @ 4 hours per event HF: minimum of 1 hour to maximum of storage capacity or until pick up LF: minimum of 8 hours to maximum of storage capacity or until pick up HF and LF recording schedule is fixed and defined as follows:

Band	Sampling	Start	Duration
HF1	48 kHz	16, 36, 56 minutes after the hour	30 s for each run
HF2	12 kHz	0, 8, 20, 28, 40, 48 minutes after the hour	4 minutes for each run
LF	2000 Hz	At logger deployment	Continuous until pickup

Frequency Bandwidth: AMT: 10 kHz to 3 Hz
MT: 400 Hz to 0.001 Hz

Calibration Version: ver.2.313 (released: 2021/10/01)

Processing: Quantec proprietary QuickLay software (ver.5.7.8.7) coupled with Egbert MT processing code (Egbert, 1997):
1) Coherent noise rejection using remote reference
2) Proprietary digital filtering (scrubbing)
3) Coherency sorting
4) Impedance estimate stacking
Processing configuration set to 12 frequencies per decade

Data processed to output X at **0° True**

Data Conventions:
Right-hand positive down coordinate system.
Time dependence: $e^{+j\omega t}$

Remote Reference Processing: See APPENDIX C for a list of remote reference sites used for each site:

Each AMT site processed with remote H- and E-referencing (2 EDI files delivered per site)

Each MT site processed with remote H- referencing (1 EDI file delivered per site)
See APPENDIX C for list of reference sites used for each MT and AMT site.

Processed Data: Auto- and cross-power spectral estimates for individual stations and sampling band archived as Spectral Density Matrix (SDM) files (Egbert output)
Results are band-merged, edited, and saved as SEG-EDI[1] (Electronic Data Interchange) files.

[1] EDI is a format conforming to SEG standard for the storage of magnetotelluric (MT) data (Wight, 1987).

Field Quality Control Tests

Parallel Sensor Test: A parallel sensor test was completed at the beginning of the survey to verify proper operation of the equipment. The test results are presented in APPENDIX E.

Remote Test: MT data was collected at the remote site prior to the survey to evaluate suitability of the site location. The test results are presented in APPENDIX F.

3.3.3.Data Presentation

Sounding Curves: Observed XY and YX apparent resistivity and phase
Observed Tzx and Tzy Tipper

(see APPENDIX D for sounding curves)

3.3.4.Ap Index

The magnetic signal strength as reported by the Ap[2] index varies from 1 to a maximum of 43, with an average near 6 during the project.

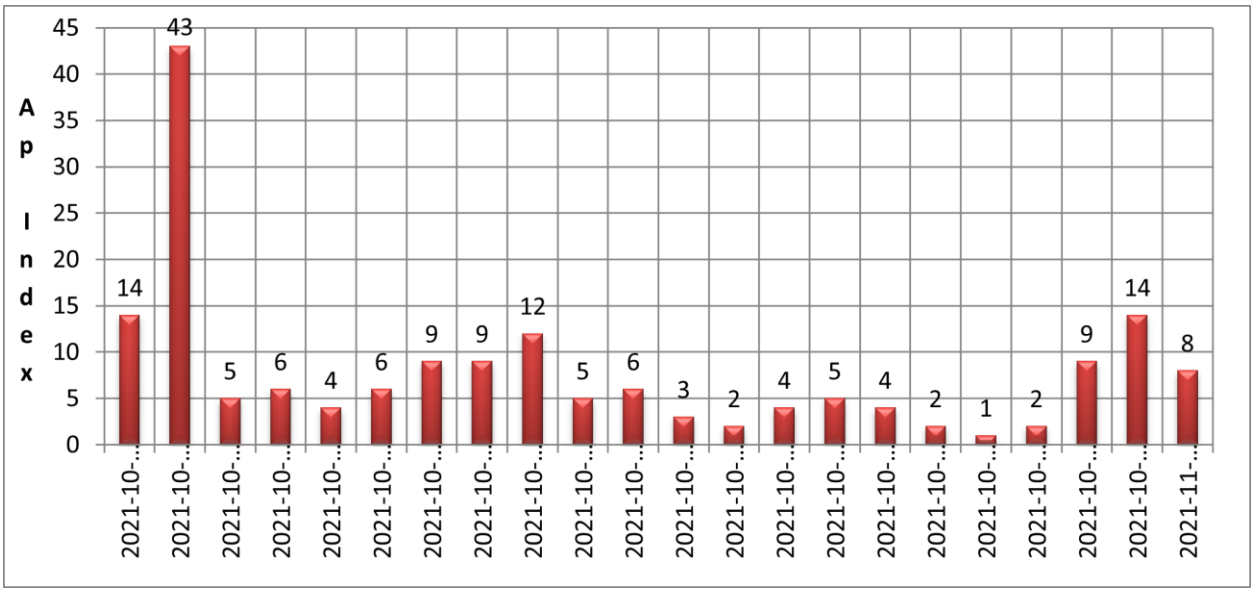


Figure 3-2: Magnetic signal strength (Ap index) during the project.

[2] Ap Index reported on the processing notes were uploaded from the Helmholtz Centre Potsdam – GFZ German Research Centre for Geosciences (https://www.gfz-potsdam.de/en/kp-index/).

4. Comments on Measured Data

General Comments:

- Most sites had clean data with the LF signal of MT clean to 0.001 Hz.
- Data was generally quiet in terms of powerline noise – except for MT sites near Haines Junction which recorded more 60 Hz powerline noise (scrubbed in processing).

Known Issues:

- Until October 16, the remote site LF Hx coil was set up at the incorrect azimuth (oriented to magnetic north instead of true north). LF data deployed October 15 and earlier was therefore referenced to coils from other sites on the grid instead of to the remote coils.
- There were several days of low signal (1 or 2 Ap index) over which data quality was slightly worse than usual.
- Occasionally the LF Hz would record low frequency noise from wind – possible due to an exposed coil. Starting Oct. 28 photos were taken of the Hz coils at LF sites at the client's request as a record of the burial condition. Repeat data were acquired where necessary to improve results.
- Due to frozen ground in some locations – especially gravel riverbeds – impedances for the electrics were sometimes higher than optimal. This caused some phase distortion at high frequencies in some AMT sites.

Special processing procedures:

- AMT data was processed to a lowest frequency of 3 Hz, which is outside the nominal bandwidth of the HF magnetic coils (usually minimum frequency 10 Hz).
- AMT sites were processed using other AMT sites on the grid as reference sites.
- AMT sites were also processed using E-referencing to other grid sites.

5. DELIVERABLES

The final deliverables include the following:

5.1. DIGITAL DATA ARCHIVE

Table 5-1: Contents of the digital archive.

Directory	Contents
\EDI	Final processed MT data (.EDI)
\Field Notes	Field setup notes for each site
\Photos	Field photographs of site and Hz coil installation
\Positioning	Site location data (Geosoft .GDB and .CSV)
\Report	Logistics report (.PDF)

5.2. FIELD DATA ARCHIVE (HARD DRIVE)

The raw field data are delivered on a hard disk drive and comprise the following:

Time Series:	Raw event files (e.g., Eventxxxx.dat), provided with log files having information on the location and time of the event (QuickLay digital format).
Processed MT Data:	Daily processing runs in QuickLay digital format saved as '.MT' files linked with SDM files containing auto- and cross-power spectral estimates for each sampling band and site; Spectra are in right-hand positive down coordinate system. Processed SDM formatted data are band-merged into geo-referenced EDI files containing auto- and cross-power spectral estimates for individual stations.

Respectfully submitted by:

Sam Edwards, Darcy McGill

Quantec Geoscience Limited

November 30, 2021

APPENDIX A. PRODUCTION SUMMARY

A.1. DAILY ACTIVITY SUMMARY

Task	Date	# sites	Site Log	Daily Field Activity
Standby	2021-10-08			Scouted and Cleared UTV trails on Grid (8:00am to 3:00pm), scouted East on Hwy for remote site (8:00am to 2:00pm)
Standby	2021-10-09			Continued scouting and clearing UTV trails on grid (8:00am to 5:30), scouted Quill creek road for remote sites (8:00am to 12:00pm)
Survey	2021-10-10			PST and remote install
Survey	2021-10-11	6	AMT69, AMT68, MT18, MT06, MT07, MT08	Install MT sites, Safety meeting at 8:00am,
Survey	2021-10-12	5	BB64, AMT62, MT19, MT74, MT75	Install MT sites, Safety meeting at 8:00am,
Survey	2021-10-13	5	MT76, MT77, MT78, AMT59, AMT63	Install MT sites, Safety meeting at 8:00am,
Survey	2021-10-14	5	MT79, MT80, MT81, AMT53, MT23	Install MT sites, Safety meeting at 8:00am,
Survey	2021-10-15	4	AMT58, AMT51. MT05, MT15	Install MT sites, Safety meeting at 8:00am,
Survey	2021-10-16	5	MT34, MT71, AMT47, AMT 52, MT22	Install MT sites, Safety meeting at 8:00am,
Survey	2021-10-17	2	MT25, MT28	Install MT sites, Safety meeting at 8:00am,
Survey	2021-10-18	4	MT30, AMT67, AMT48, AMT49	Install MT sites, Safety meeting at 8:00am,
Survey	2021-10-19	3	MT37, MT32, AMT72	Install MT sites, Safety meeting at 8:00am,
Fatigue	2021-10-20			Fatigue day
Survey	2021-10-21	4	MT16, BBMT20, AMT66, MT29	Install MT sites, Safety meeting at 8:00am,
Survey	2021-10-22	5	MT10, MT38, AMT44, AMT57, BBMT65	Install MT sites, Safety meeting at 8:00am,
Survey	2021-10-23	2	MT42, MT33	Install MT sites, Safety meeting at 8:00am,

Task	Date	# sites	Site Log	Daily Field Activity
Survey	2021-10-24	5	MT39, MT12, AMT17, AMT60, AMT61	Install MT sites, Safety meeting at 8:00am,
Survey	2021-10-25	5	AMT56, AMT73, MT35, MT11, AMT55	Install MT sites, Safety meeting at 8:00am,
Survey	2021-10-26	3	MT09, MT36, AMT31	Install MT sites, Safety meeting at 8:00am,
Survey	2021-10-27	4	MT41, AMT27, AMT43, AMT21	Install MT sites, Safety meeting at 8:00am,
Survey	2021-10-28	4	MT40, AMT24, AMT54, AMT45	Install MT sites, Safety meeting at 8:00am,
Survey	2021-10-29	2	MT82, MT83	Install MT sites, Safety meeting at 8:00am,
Survey	2021-10-30	5	AMT46, AMT50, MT01, MT02, MT14	Install MT sites, Safety meeting at 8:00am,
Survey	2021-10-31	5	AMT26, AMT70, MT03, MT04, MT13	Install MT sites, Safety meeting at 8:00am,
Survey	2021-11-01	2	MT02R, MT04R	Install MT sites, Safety meeting at 8:00am,

APPENDIX B. SURVEY COVERAGE

B.1. MT SITES

B.1.1. MT Site Locations (Surveyed)

Site ID (EDI)	UTM (NAD83, Zone 7N) Easting	Northing	Longitude (dd:mm:ss.ssE)	Latitude (dd:mm:ss.ssN)	Elevation (m)
AMT Only					
AMT17	599139.3	6806888	139°08'39.94"W	61°22'59.75"N	858.91
AMT21	597017.5	6804596	139°11'7.12"W	61°21'47.66"N	1055.75
AMT24	596813.8	6805574	139°11'19.00"W	61°22'19.44"N	1026.83
AMT26	597658.1	6805080	139°10'23.10"W	61°22'2.70"N	983.5
AMT27	597819.5	6806061	139°10'10.38"W	61°22'34.25"N	915.54
AMT31	597881.1	6806615	139°10'5.18"W	61°22'52.09"N	902.23
AMT43	598264.6	6806135	139°09'40.28"W	61°22'36.22"N	900.26
AMT44	599350.8	6806069	139°08'27.27"W	61°22'33.12"N	867
AMT45	597668.9	6805569	139°10'21.44"W	61°22'18.51"N	948.8
AMT46	598234.4	6805581	139°09'43.36"W	61°22'18.36"N	924.59
AMT47	598792.8	6805483	139°09'5.95"W	61°22'14.68"N	874.92
AMT48	599193.4	6805614	139°08'38.74"W	61°22'18.55"N	873.25
AMT49	599701.2	6805606	139°08'4.58"W	61°22'17.83"N	867.37
AMT50	598134	6805089	139°09'51.05"W	61°22'2.56"N	944.66
AMT51	598641.7	6805089	139°09'16.88"W	61°22'2.10"N	882.03
AMT52	599158.6	6805103	139°08'42.06"W	61°22'2.07"N	876.44
AMT53	599658.8	6805093	139°08'8.41"W	61°22'1.31"N	871.34
AMT54	597075.7	6805080	139°11'2.29"W	61°22'3.23"N	1020.31
AMT55	597561.8	6804534	139°10'30.60"W	61°21'45.15"N	1017.75
AMT56	598067.7	6804567	139°09'56.50"W	61°21'45.76"N	985.5
AMT57	598431	6804597	139°09'31.99"W	61°21'46.39"N	963.85
AMT58	599066.7	6804588	139°08'49.23"W	61°21'45.53"N	942.8
AMT59	599581.9	6804590	139°08'14.55"W	61°21'45.14"N	902.78
AMT60	597478.8	6804059	139°10'37.08"W	61°21'29.90"N	1091.71
AMT61	597989.3	6804119	139°10'2.62"W	61°21'31.36"N	988.05
AMT62	598493.1	6804085	139°09'28.78"W	61°21'29.81"N	968.12
AMT63	599005.8	6804143	139°08'54.18"W	61°21'31.22"N	962.56
AMT66	597402.8	6803586	139°10'43.09"W	61°21'14.67"N	1101.68

Site ID (EDI)	UTM (NAD83, Zone 7N) Easting	Northing	Longitude (dd:mm:ss.ssE)	Latitude (dd:mm:ss.ssN)	Elevation (m)
AMT67	597903.2	6803612	139°10'9.37"W	61°21'15.07"N	990.1
AMT68	598406.9	6803570	139°09'35.56"W	61°21'13.26"N	961.73
AMT69	598939.7	6803632	139°08'59.60"W	61°21'14.77"N	986.82
AMT70	597229.1	6805581	139°10'51.03"W	61°22'19.28"N	1001.18
AMT72	599865.8	6806374	139°07'52.01"W	61°22'42.49"N	861.89
AMT73	598575.5	6806744	139°09'18.18"W	61°22'55.61"N	878.56
AMT & MT					
BBMT20	598764.4	6806141	139°09'6.61"W	61°22'35.98"N	900.47
BBMT64	599478.6	6804129	139°08'22.39"W	61°21'30.32"N	932.78
BBMT65	596892.3	6804073	139°11'16.52"W	61°21'30.86"N	1132.38
MT Only					
MT01	566594	6838936	139°44'30.41"W	61°40'40.22"N	721.65
MT02	576143.3	6832025	139°33'51.47"W	61°36'50.56"N	830.46
MT03	588888.4	6824570	139°19'39.74"W	61°32'39.91"N	741.79
MT04	593376.7	6816080	139°14'51.37"W	61°28'1.84"N	809.85
MT05	614077.2	6798067	138°52'13.57"W	61°18'0.13"N	812.83
MT06	621179	6791141	138°44'32.80"W	61°14'8.74"N	793
MT07	628288	6784995	138°36'51.52"W	61°10'42.11"N	816
MT08	632962	6774972	138°32'4.22"W	61°05'12.86"N	798
MT09	600823.3	6812456	139°06'35.68"W	61°25'58.06"N	805.23
MT10	604043.4	6810423	139°03'2.61"W	61°24'49.33"N	796.88
MT11	599467.6	6810286	139°08'11.30"W	61°24'49.22"N	819.93
MT12	601367.4	6807968	139°06'7.79"W	61°23'32.58"N	836.49
MT13	602623.7	6806817	139°04'45.46"W	61°22'54.20"N	831.08
MT14	604504.4	6805640	139°02'41.20"W	61°22'14.37"N	819.55
MT15	605810.8	6804759	139°01'15.07"W	61°21'44.67"N	805.48
MT16	597284.6	6807665	139°10'43.37"W	61°23'26.54"N	880.34
MT18	601391.2	6805030	139°06'11.94"W	61°21'57.64"N	833.89
MT19	603233.9	6803901	139°04'10.18"W	61°21'19.44"N	843.57
MT22	601009.8	6802794	139°06'41.96"W	61°20'45.78"N	937.82
MT23	603322	6801413	139°04'9.20"W	61°19'58.99"N	900
MT25	594852.1	6804909	139°13'32.27"W	61°21'59.70"N	1257.64
MT28	599879.8	6801959	139°07'59.57"W	61°20'19.87"N	1083.87
MT29	600901.9	6799411	139°06'55.79"W	61°18'56.61"N	1300.19
MT30	594917.4	6803188	139°13'31.03"W	61°21'4.04"N	1279.99

Site ID (EDI)	UTM (NAD83, Zone 7N)		Longitude (dd:mm:ss.ssE)	Latitude (dd:mm:ss.ssN)	Elevation (m)
	Easting	Northing			
MT32	598092.4	6801147	139°10'1.30"W	61°19'55.26"N	1025.11
MT33	599831.8	6800233	139°08'6.11"W	61°19'24.16"N	1196.6
MT34	595767.8	6801398	139°12'37.12"W	61°20'5.45"N	1090.03
MT35	596758.9	6799738	139°11'33.57"W	61°19'10.97"N	964.68
MT36	598481.3	6798635	139°09'39.91"W	61°18'33.77"N	1206.66
MT37	593360.4	6801928	139°15'18.04"W	61°20'24.68"N	1276.1
MT38	594123.2	6799628	139°14'30.91"W	61°19'9.72"N	1236.88
MT39	595405.1	6798378	139°13'7.05"W	61°18'28.24"N	1082.65
MT40	597097.9	6797226	139°11'15.48"W	61°17'49.49"N	1056.64
MT41	599145.9	6796492	139°08'59.34"W	61°17'23.95"N	1384.99
MT42	594320.2	6797136	139°14'22.18"W	61°17'49.07"N	1120.82
MT71	597889.3	6802683	139°10'12.06"W	61°20'45.06"N	915.91
MT74	641630	6769450	138°22'41.04"W	61°02'3.68"N	819.95
MT75	650770.6	6766696	138°12'40.50"W	61°00'22.57"N	957.28
MT76	659538.4	6762308	138°03'10.69"W	60°57'48.54"N	960.81
MT77	669177.3	6757853	137°52'44.88"W	60°55'10.32"N	876.47
MT78	673892.2	6750344	137°47'56.66"W	60°51'0.65"N	1031.79
MT79	681619.7	6744911	137°39'43.87"W	60°47'52.90"N	684.03
MT80	690401.4	6746180	137°29'59.63"W	60°48'19.07"N	661.31
MT81	699618	6749510	137°19'38.82"W	60°49'50.23"N	687.41
MT82	709047.5	6751670	137°09'7.52"W	60°50'42.42"N	672.1
MT83	717729.4	6751964	136°59'32.64"W	60°50'35.12"N	686.28

APPENDIX C. SITE REMOTE REFERENCE LIST

Site	Reference	Site	Reference	Site	Reference
MT01	Remote	MT29	Remote	AMT57	AMT44
MT02	Remote	MT30	Remote	AMT58	AMT51
MT03	Remote	AMT31	AMT55	AMT59	AMT63
MT04	Remote	MT32	Remote	AMT60	AMT61
MT05	MT15	MT33	Remote	AMT61	AMT17
MT06	MT18	MT34	Remote	AMT62	BBMT64
MT07	MT18	MT35	Remote	AMT63	AMT59
MT08	MT18	MT36	Remote	BBMT64	AMT62/MT75
MT09	Remote	MT37	Remote	BBMT65	AMT44/Remote
MT10	Remote	MT38	Remote	AMT66	BBMT20
MT11	Remote	MT39	Remote	AMT67	AMT48
MT12	Remote	MT40	Remote	AMT68	AMT69
MT13	Remote	MT41	Remote	AMT69	AMT68
MT14	Remote	MT42	Remote	AMT70	AMT26
MT15	MT05	AMT43	AMT27	MT71	Remote
MT16	Remote	AMT44	AMT57	AMT72	E: MT32/ H: Remote
AMT17	AMT61	AMT45	AMT24	AMT73	AMT56
MT18	MT06	AMT46	AMT50	MT74	BBMT64
MT19	MT75	AMT47	AMT52	MT75	BBMT64
BBMT20	Remote/AMT66	AMT48	AMT67	MT76	MT78
AMT21	AMT27	AMT49	AMT67	MT77	MT76
MT22	Remote	AMT50	AMT46	MT78	MT76
MT23	MT81	AMT51	AMT58	MT79	MT23
AMT24	AMT45	AMT52	AMT47	MT80	MT23
MT25	Remote	AMT53	E: MT23/ H: Remote	MT81	MT23
AMT26	AMT70	AMT54	AMT45	MT82	Remote
AMT27	AMT43	AMT55	AMT31	MT83	Remote
MT28	Remote	AMT56	AMT73		

APPENDIX D. MEASURED MT DATA

This section presents the final processed MT data on a site-by-site basis as:

Sounding curves

a. Observed XY and YX Apparent Resistivity (Ω·m)
b. Observed XY and YX Phase
c. Observed Tzx and Tzy Tipper

Notice:

Mode **XY** is defined by Electrical (**Ex**) field and orthogonal magnetic (**Hy**) field (=Ex/Hy);

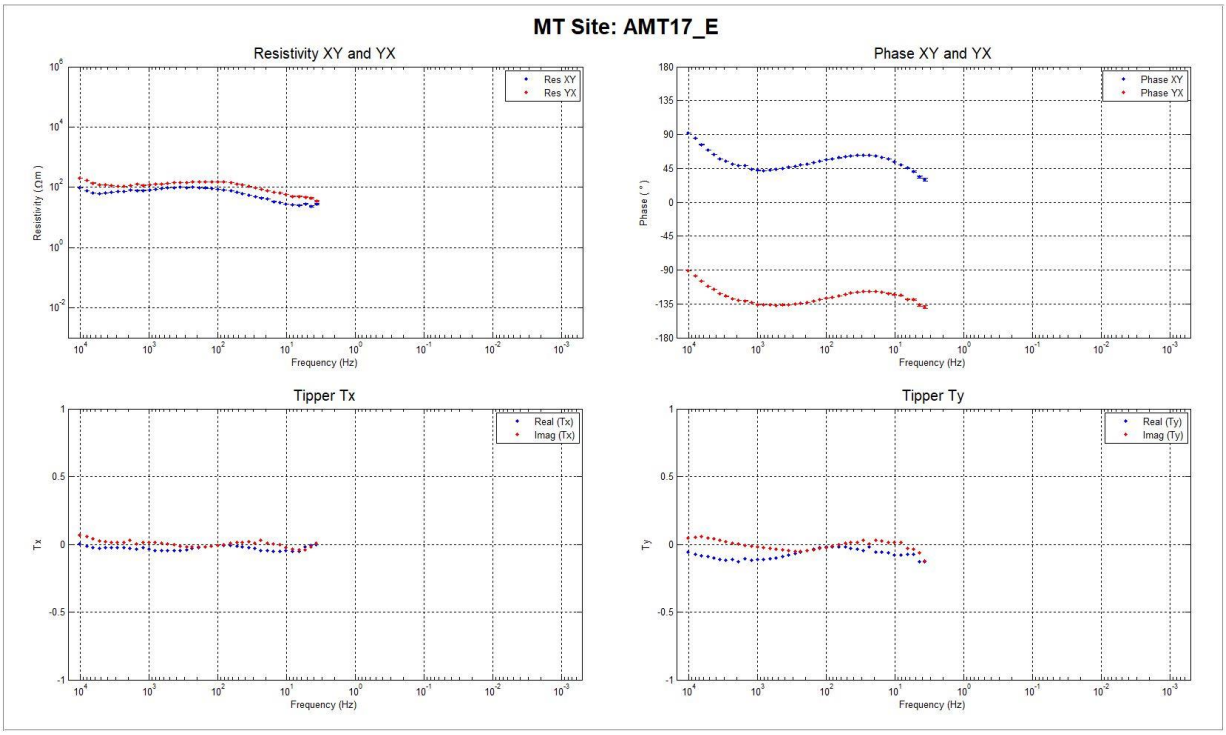
Mode **YX** is defined by Electrical (**Ey**) field and orthogonal Magnetic (**Hx**) field (=Ey/Hx);

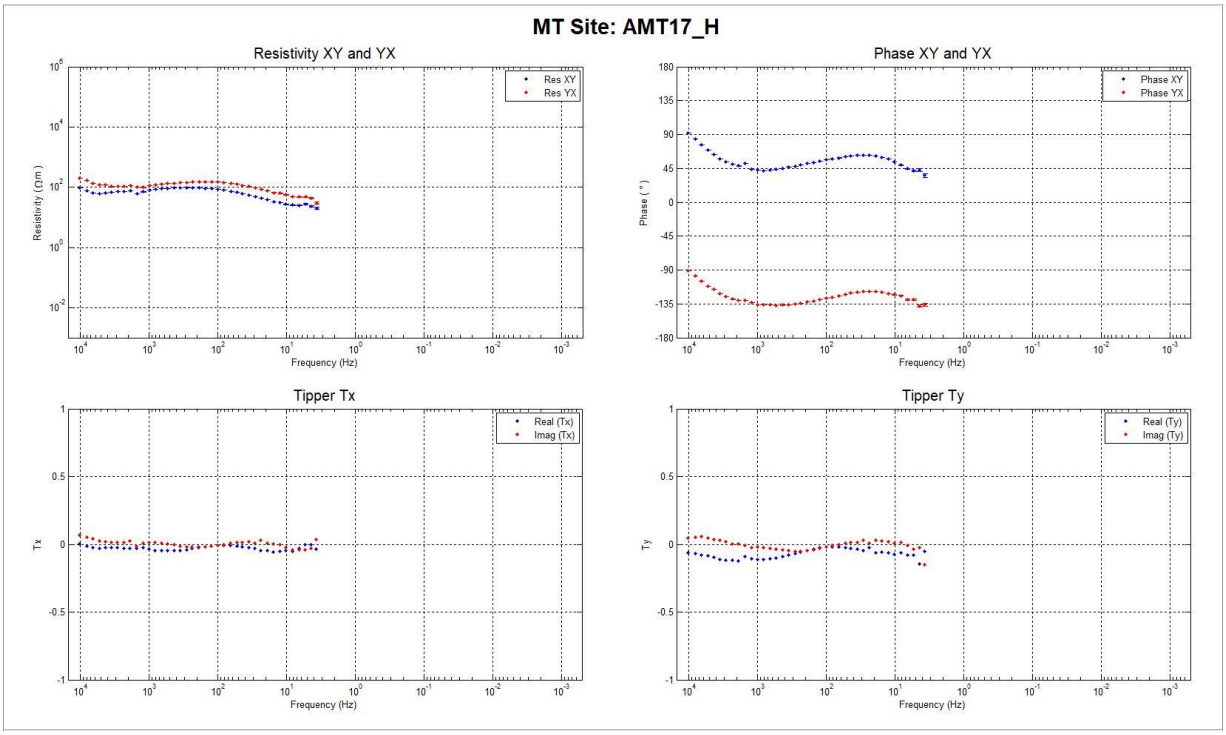
Tipper **Tzx** and **Tzy** represent the ratio of the Vertical Magnetic (**Hz**) field and the Horizontal X (**Hx**) and Y Magnetic (**Hy**) fields respectively;

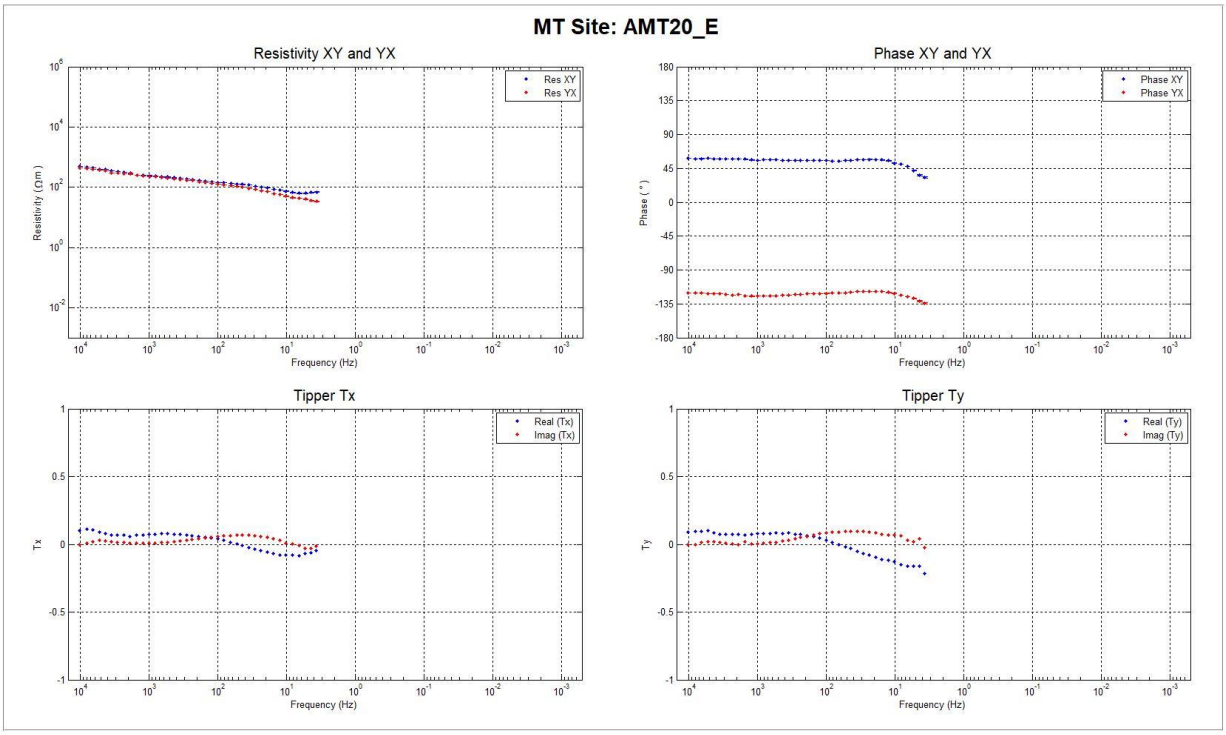
X-axis pointing to **0° True** and Y is perpendicular to X (right hand positive down coordinate system)

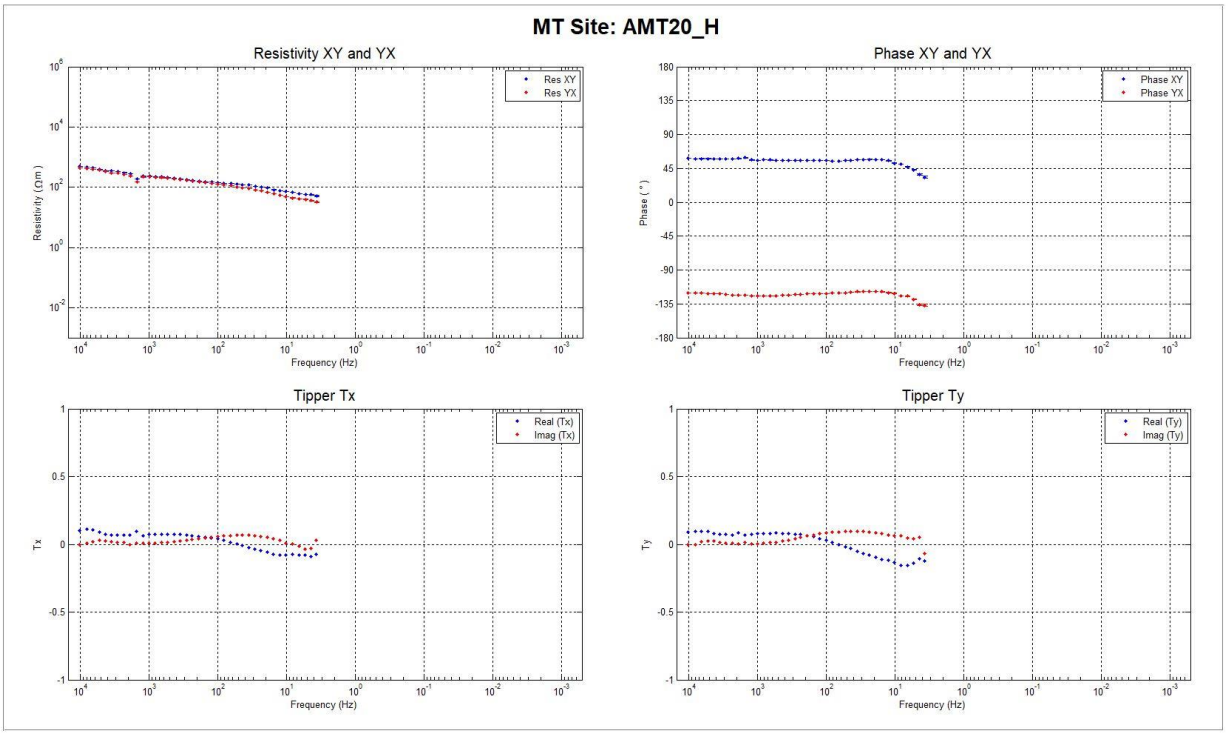
AMT sites have both **H**- and **E**-referenced versions of the EDIs (listed as AMTXX_H and AMTXX_E respectively).

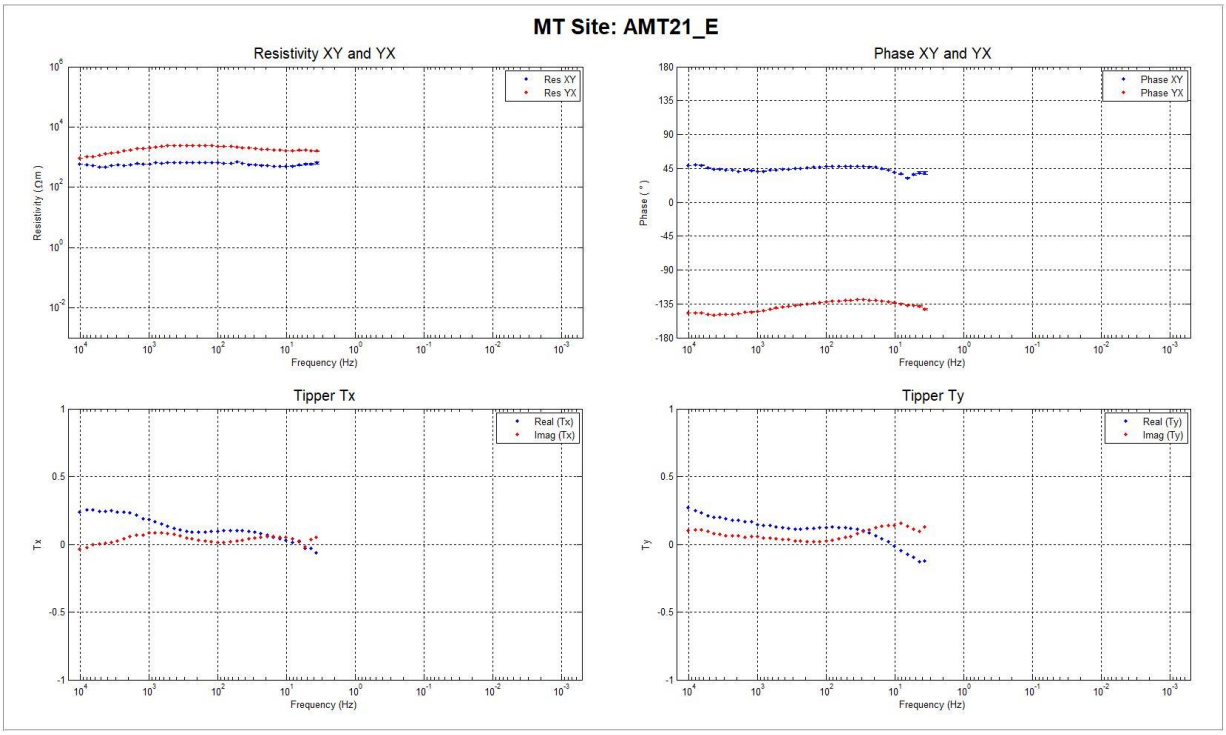
D.1. AMT SITES

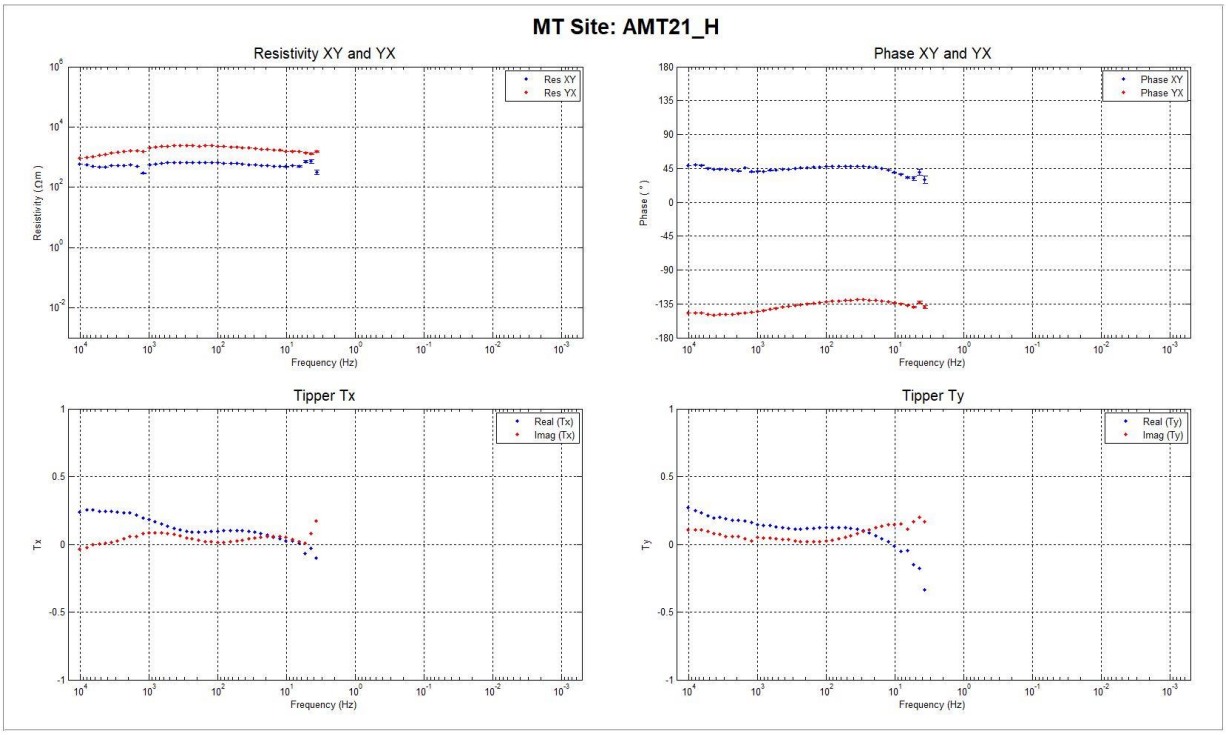

MT Site: AMT17_E
Resistivity XY and YX
Res XY
Res YX
Resistivity (Ωm)
Frequency (Hz)
Phase XY and YX
Phase XY
Phase YX
Phase (°)
Frequency (Hz)
Tipper Tx
Real (Tx)
Imag (Tx)
Tx
Frequency (Hz)
Tipper Ty
Real (Ty)
Imag (Ty)
Ty
Frequency (Hz)

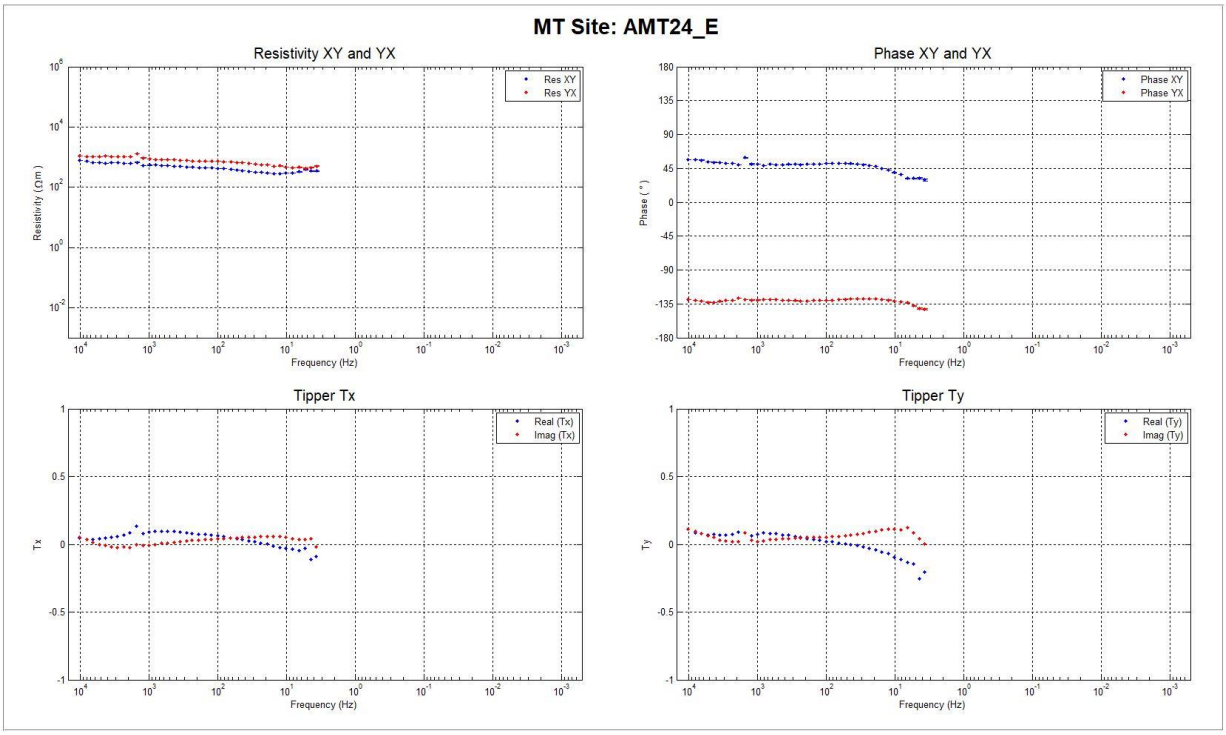

MT Site: AMT17_H
Resistivity XY and YX
Res XY
Res YX
Resistivity (Ωm)
Frequency (Hz)
Phase XY and YX
Phase XY
Phase YX
Phase (°)
Frequency (Hz)
Tipper Tx
Real (Tx)
Imag (Tx)
Tx
Frequency (Hz)
Tipper Ty
Real (Ty)
Imag (Ty)
Ty
Frequency (Hz)


MT Site: AMT20_E
Resistivity XY and YX
Res XY
Res YX
Resistivity (Ωm)
Frequency (Hz)
Phase XY and YX
Phase XY
Phase YX
Phase (°)
Frequency (Hz)
Tipper Tx
Real (Tx)
Imag (Tx)
Tx
Frequency (Hz)
Tipper Ty
Real (Ty)
Imag (Ty)
Ty
Frequency (Hz)


MT Site: AMT20_H
Resistivity XY and YX
Res XY
Res YX
Resistivity (Ωm)
Frequency (Hz)
Phase XY and YX
Phase XY
Phase YX
Phase (°)
Frequency (Hz)
Tipper Tx
Real (Tx)
Imag (Tx)
Tx
Frequency (Hz)
Tipper Ty
Real (Ty)
Imag (Ty)
Ty
Frequency (Hz)


MT Site: AMT21_E
Resistivity XY and YX
Res XY
Res YX
Resistivity (Ωm)
Frequency (Hz)
Phase XY and YX
Phase XY
Phase YX
Phase (°)
Frequency (Hz)
Tipper Tx
Real (Tx)
Imag (Tx)
Tx
Frequency (Hz)
Tipper Ty
Real (Ty)
Imag (Ty)
Ty
Frequency (Hz)


MT Site: AMT21_H
Resistivity XY and YX
Res XY
Res YX
Resistivity (Ωm)
Frequency (Hz)
Phase XY and YX
Phase XY
Phase YX
Phase (°)
Frequency (Hz)
Tipper Tx
Real (Tx)
Imag (Tx)
Tx
Frequency (Hz)
Tipper Ty
Real (Ty)
Imag (Ty)
Ty
Frequency (Hz)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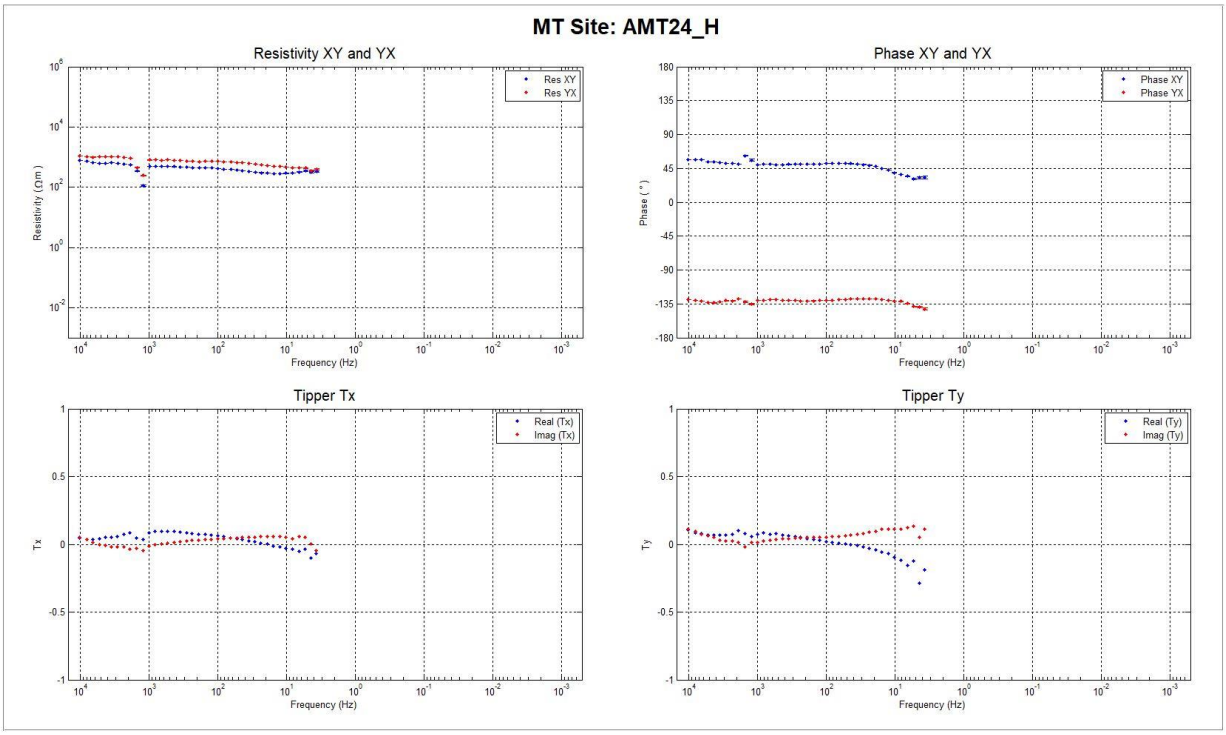
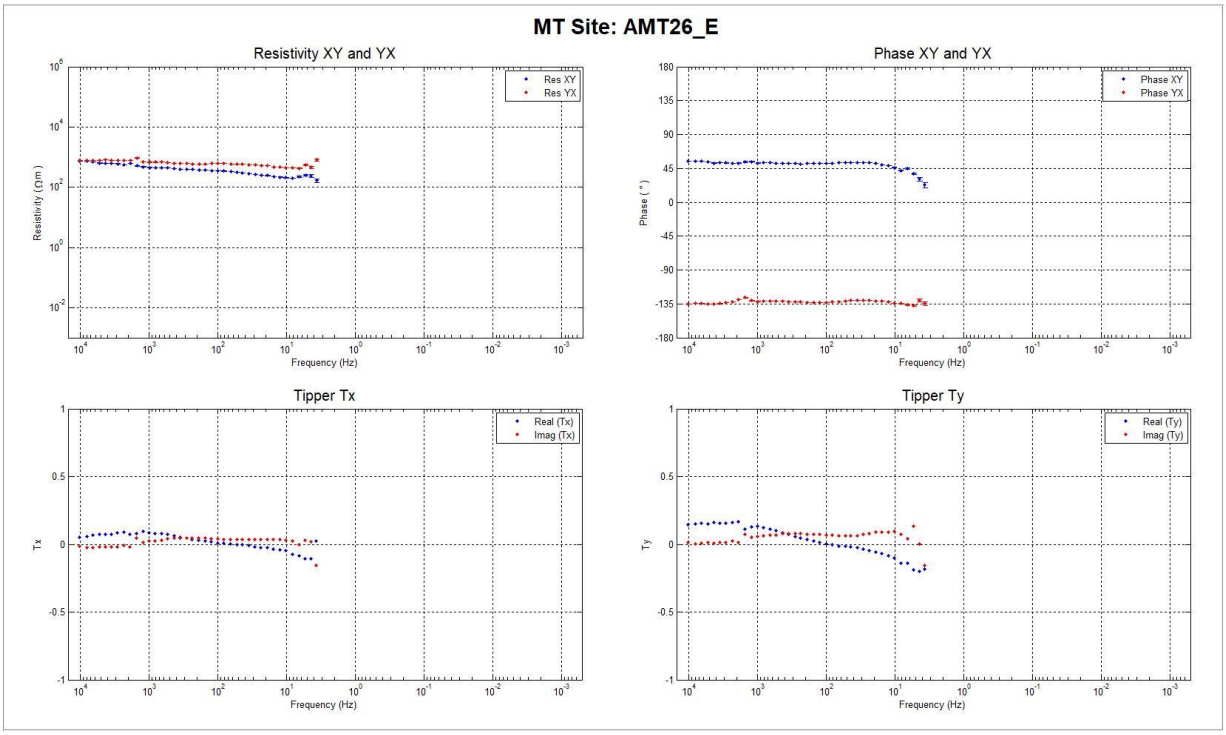
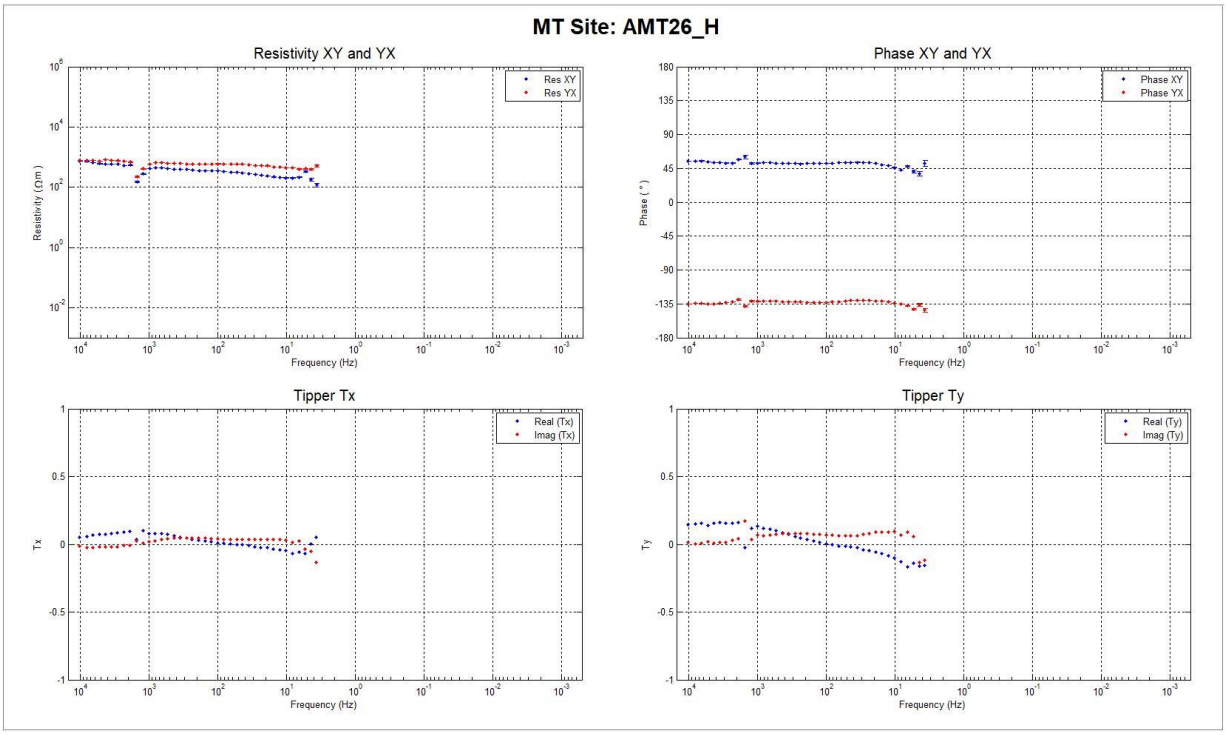
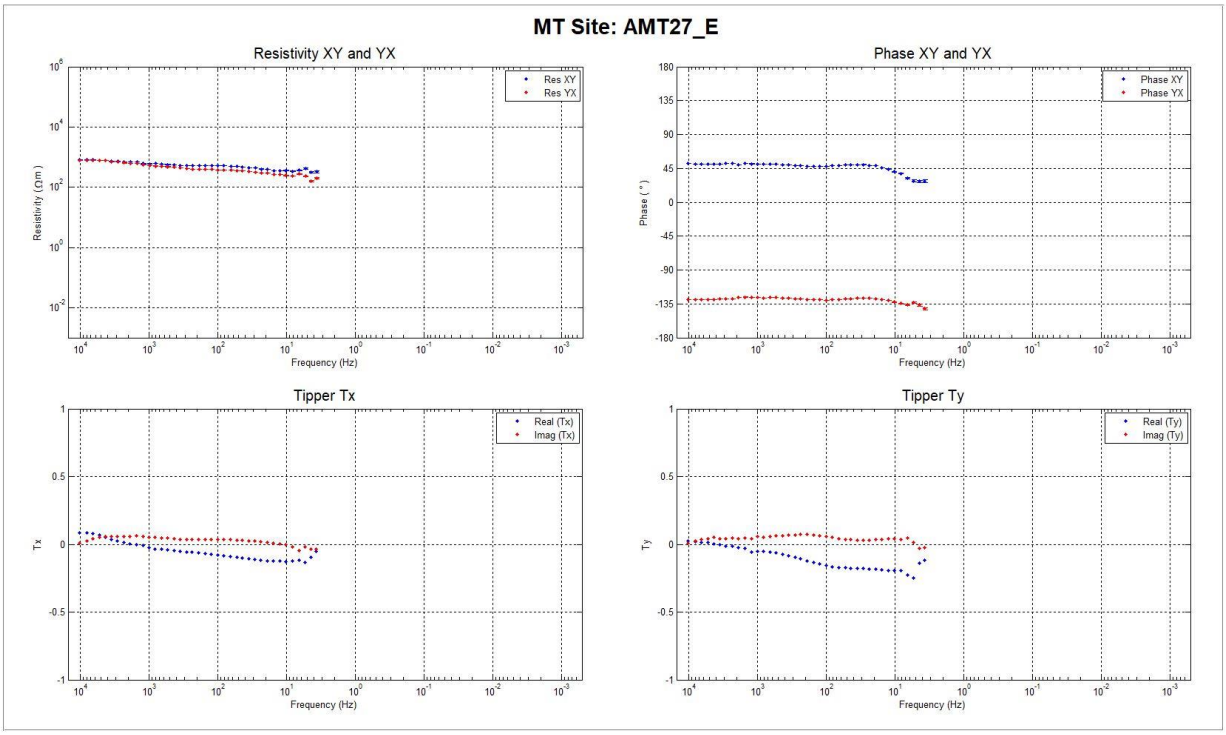
Res XY
Res YX
Resistivity (Ωm)
Frequency (Hz)
Phase XY and YX
Phase XY
Phase YX
Phase (°)
Frequency (Hz)
Tipper Tx
Real (Tx)
Imag (Tx)
Tx
Frequency (Hz)
Tipper Ty
Real (Ty)
Imag (Ty)
Ty
Frequency (Hz)


MT Site: AMT24_H
Resistivity XY and YX
Res XY
Res YX
Resistivity (Ωm)
Frequency (Hz)
Phase XY and YX
Phase XY
Phase YX
Phase (°)
Frequency (Hz)
Tipper Tx
Real (Tx)
Imag (Tx)
Tx
Frequency (Hz)
Tipper Ty
Real (Ty)
Imag (Ty)
Ty
Frequency (Hz)


MT Site: AMT26_E
Resistivity XY and YX
Res XY
Res YX
Resistivity (Ωm)
Frequency (Hz)
Phase XY and YX
Phase XY
Phase YX
Phase (°)
Frequency (Hz)
Tipper Tx
Real (Tx)
Imag (Tx)
Tx
Frequency (Hz)
Tipper Ty
Real (Ty)
Imag (Ty)
Ty
Frequency (Hz)


MT Site: AMT26_H
Resistivity XY and YX
Res XY
Res YX
Resistivity (Ωm)
Frequency (Hz)
Phase XY and YX
Phase XY
Phase YX
Phase (°)
Frequency (Hz)
Tipper Tx
Real (Tx)
Imag (Tx)
Tx
Frequency (Hz)
Tipper Ty
Real (Ty)
Imag (Ty)
Ty
Frequency (Hz)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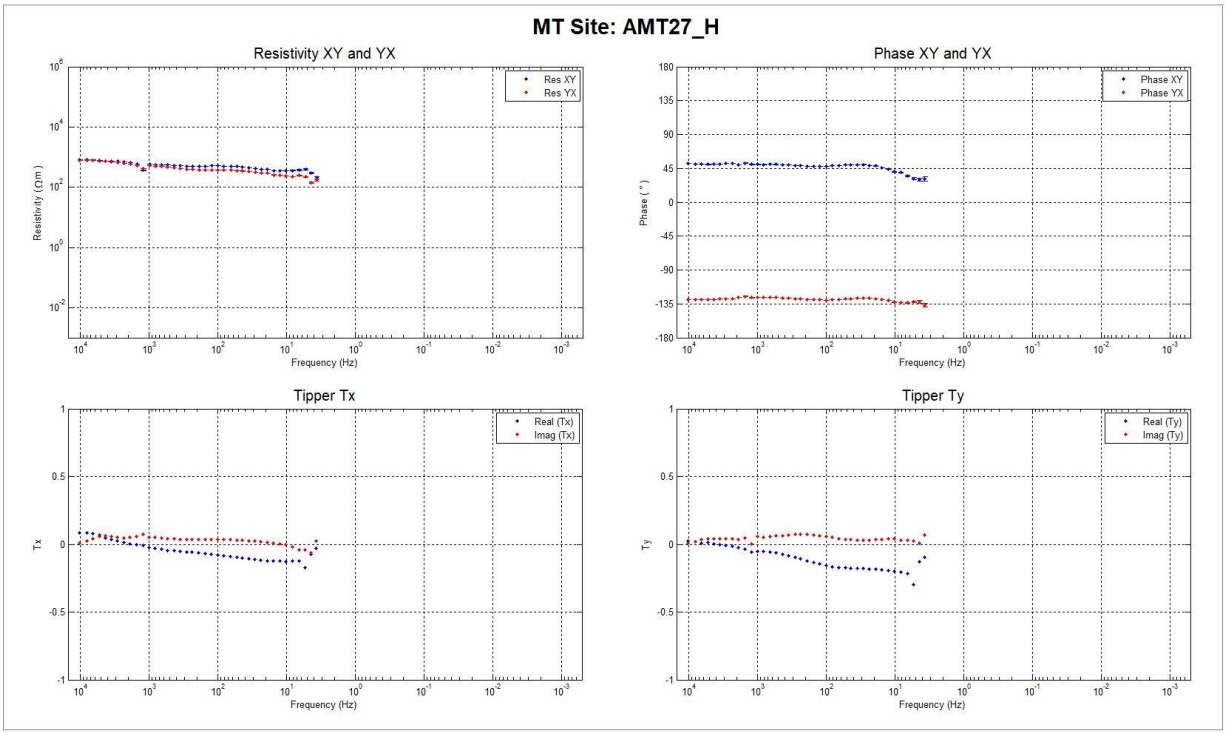
Res XY
Res YX
Resistivity (Ωm)
Frequency (Hz)
Phase XY and YX
Phase XY
Phase YX
Phase (°)
Frequency (Hz)
Tipper Tx
Real (Tx)
Imag (Tx)
Tx
Frequency (Hz)
Tipper Ty
Real (Ty)
Imag (Ty)
Ty
Frequency (Hz)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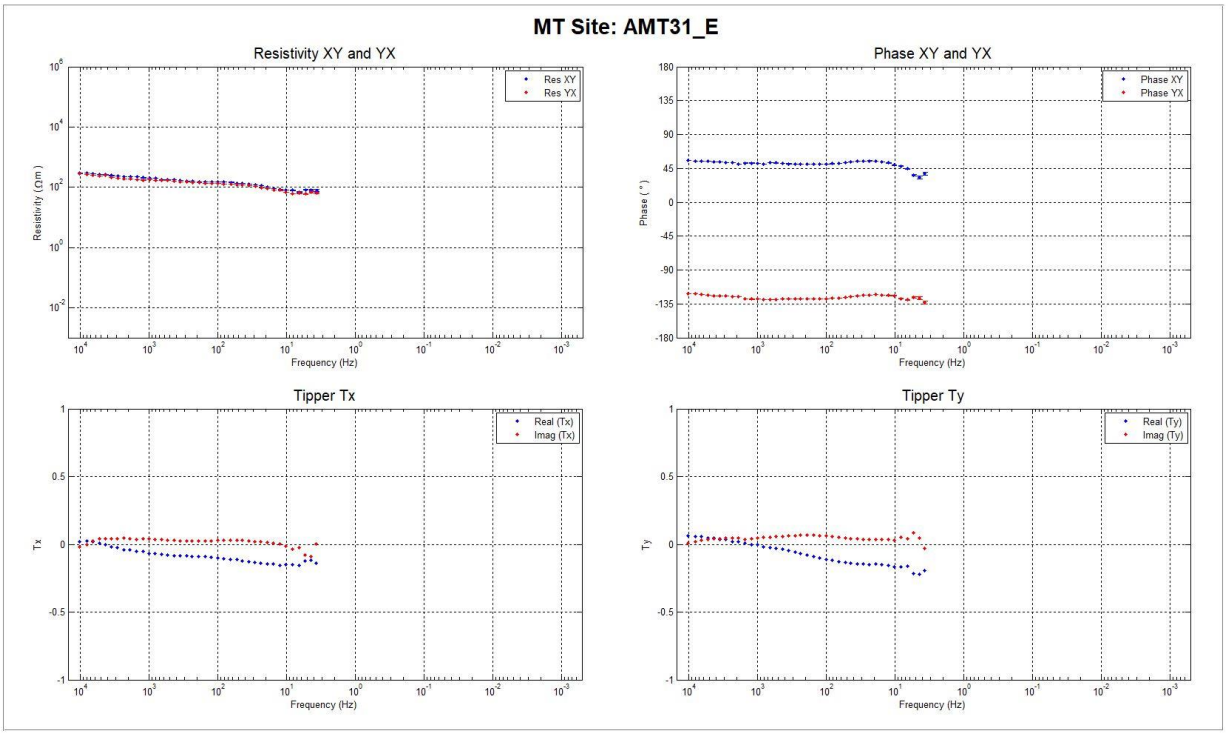
Res YX
Resistivity (Ωm)
Frequency (Hz)
Phase XY and YX
Phase XY
Phase YX
Phase (°)
Frequency (Hz)
Tipper Tx
Real (Tx)
Imag (Tx)
Tx
Frequency (Hz)
Tipper Ty
Real (Ty)
Imag (Ty)
Ty
Frequency (Hz)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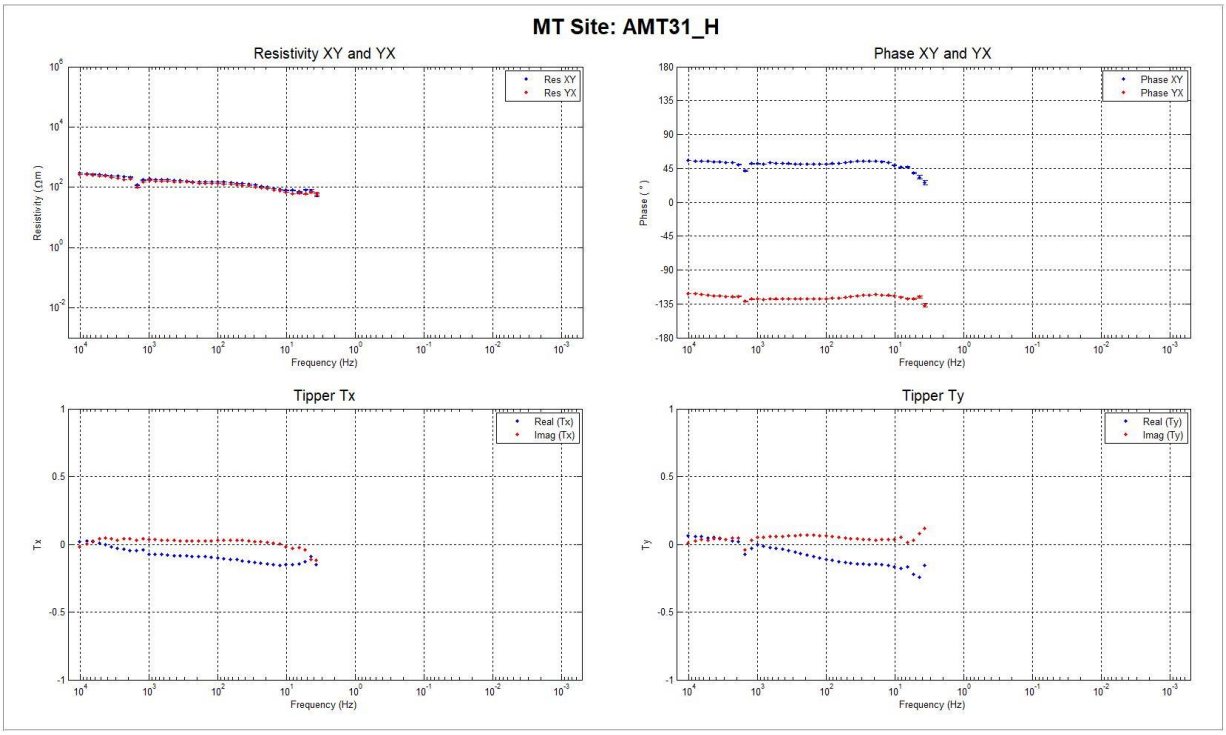
Res XY
Res YX
Resistivity (Ωm)
Frequency (Hz)
Phase XY and YX
Phase XY
Phase YX
Phase (°)
Frequency (Hz)
Tipper Tx
Real (Tx)
Imag (Tx)
Tx
Frequency (Hz)
Tipper Ty
Real (Ty)
Imag (Ty)
Ty
Frequency (Hz)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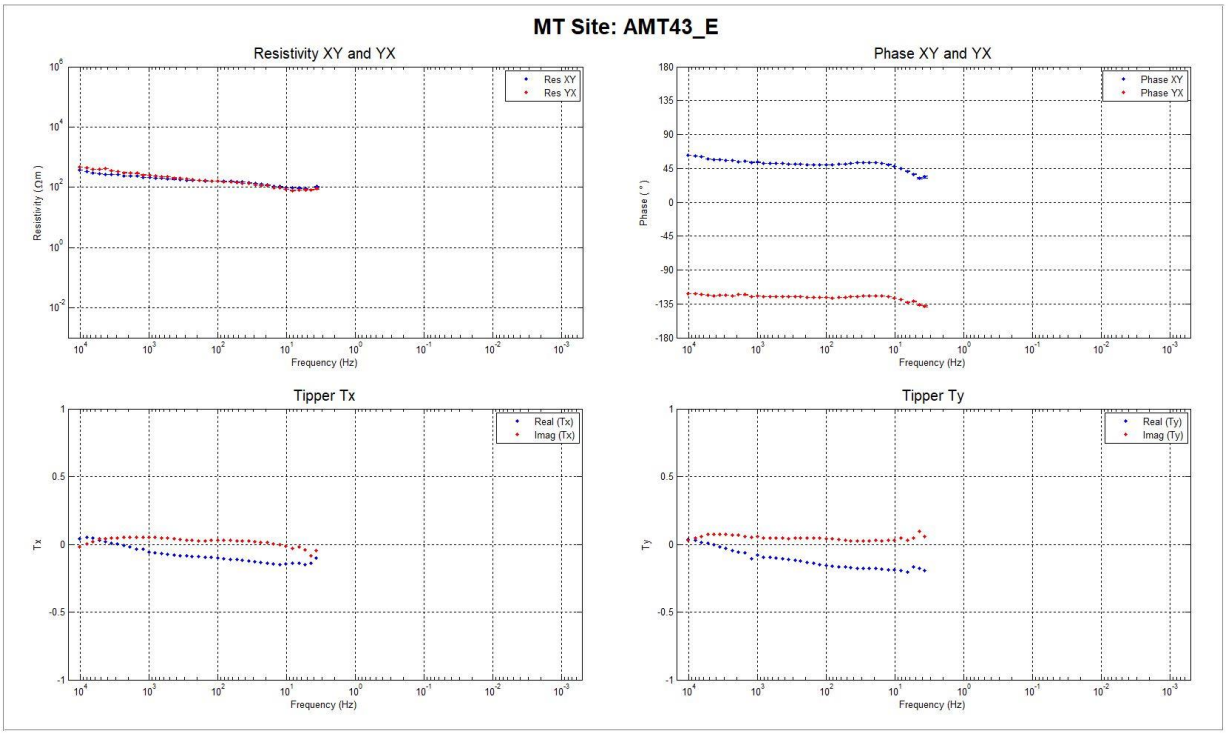
Resistivity XY and YX
Res XY
Res YX
Resistivity (Ωm)
Frequency (Hz)
Phase XY and YX
Phase XY
Phase YX
Phase (°)
Frequency (Hz)
Tipper Tx
Real (Tx)
Imag (Tx)
Tx
Frequency (Hz)
Tipper Ty
Real (Ty)
Imag (Ty)
Ty
Frequency (Hz)


MT Site: AMT43_E
Resistivity XY and YX
Res XY
Res YX
Resistivity (Ωm)
Frequency (Hz)
Phase XY and YX
Phase XY
Phase YX
Phase (°)
Frequency (Hz)
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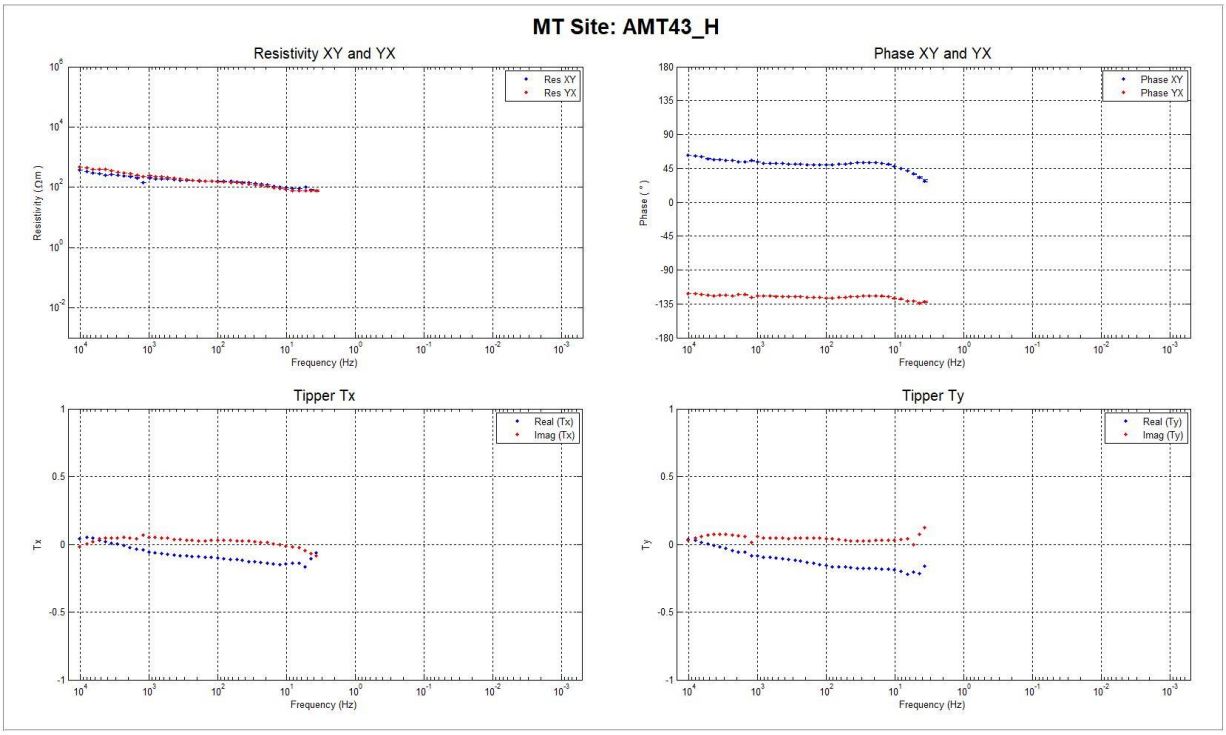
Tipper Ty
Real (Ty)
Imag (Ty)
Ty
Frequency (Hz)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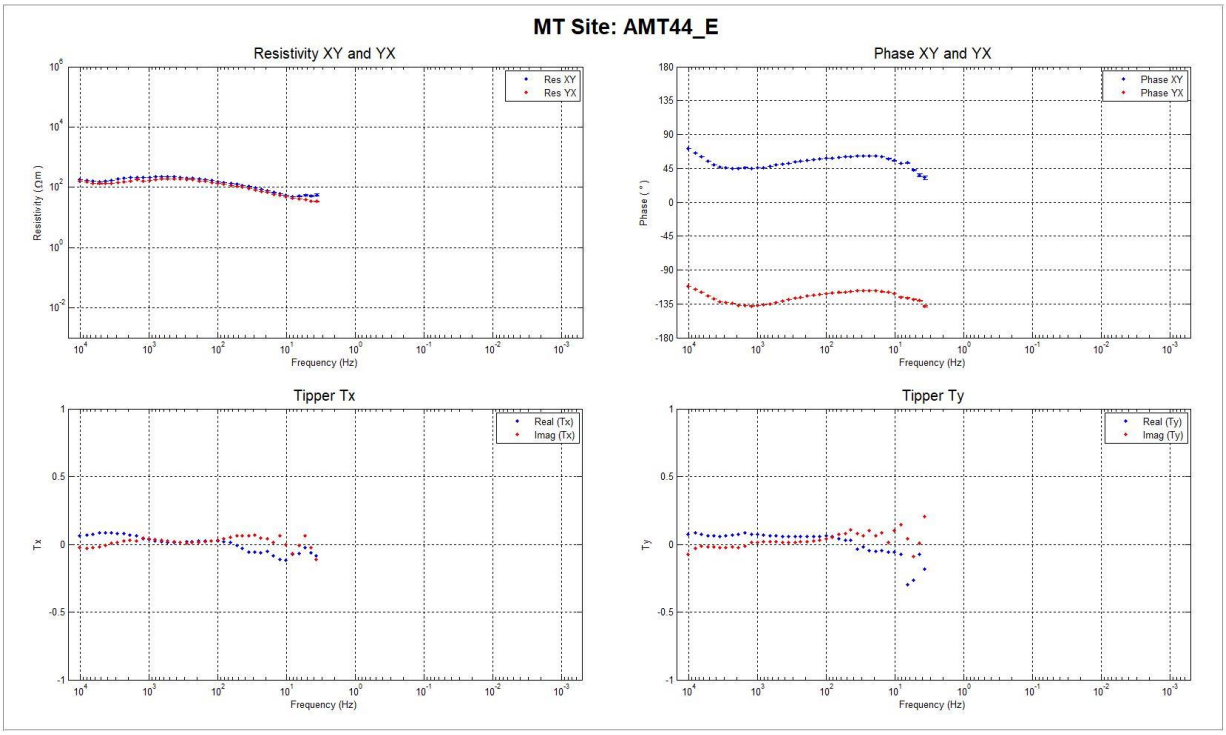
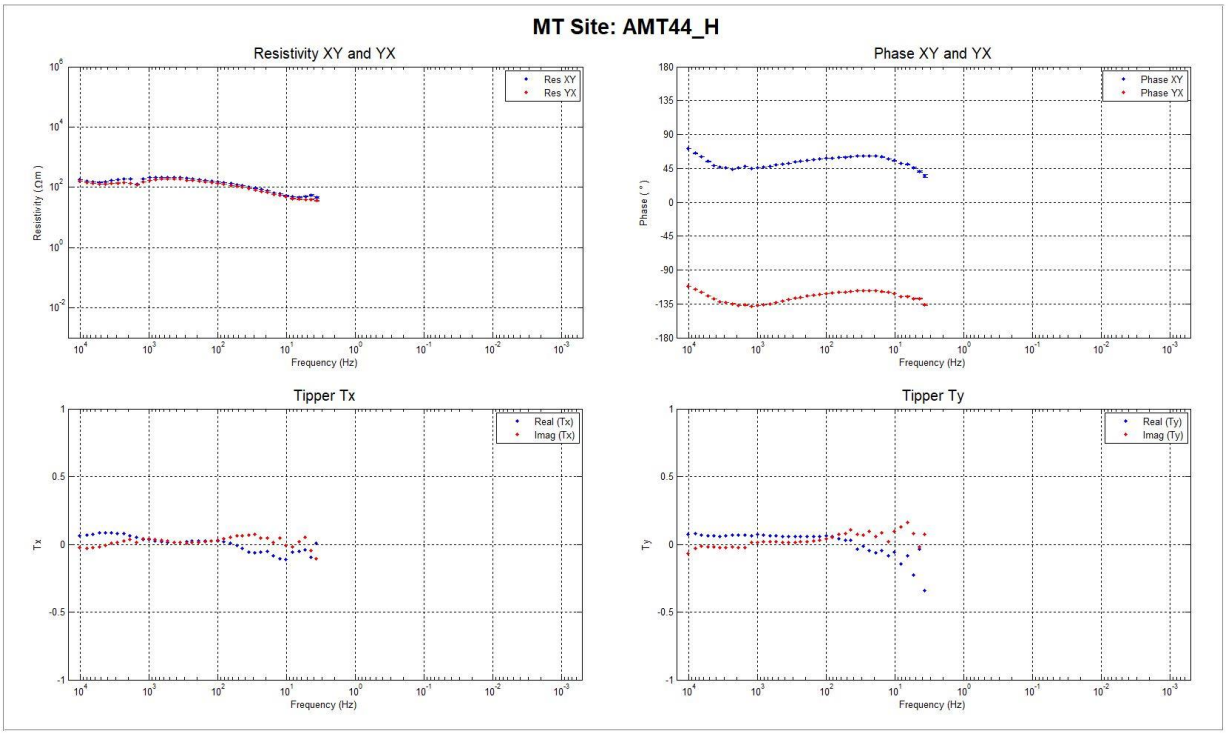
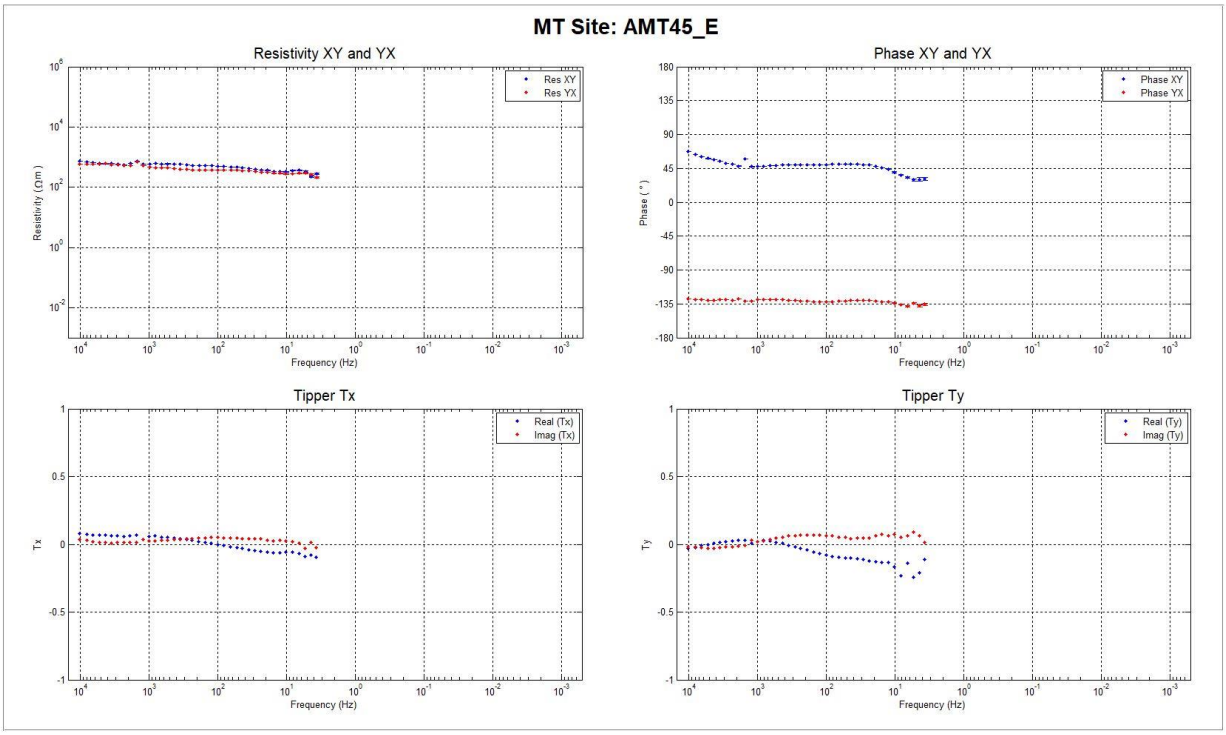
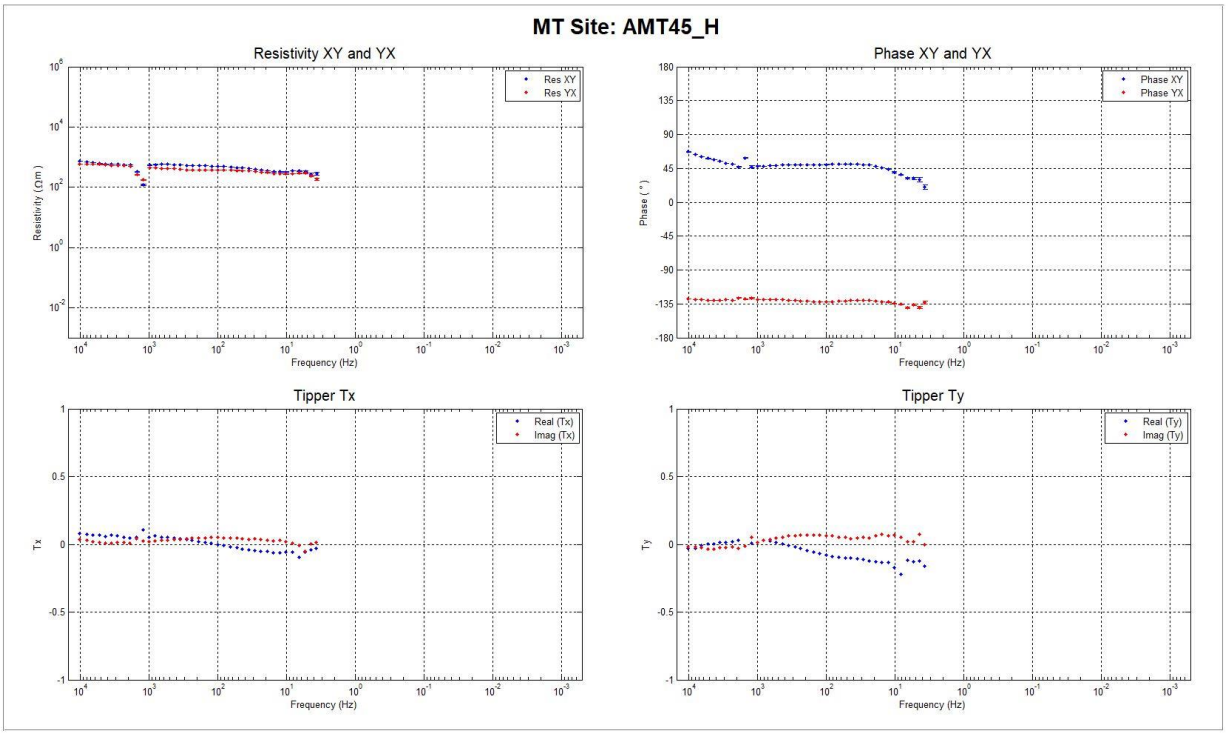
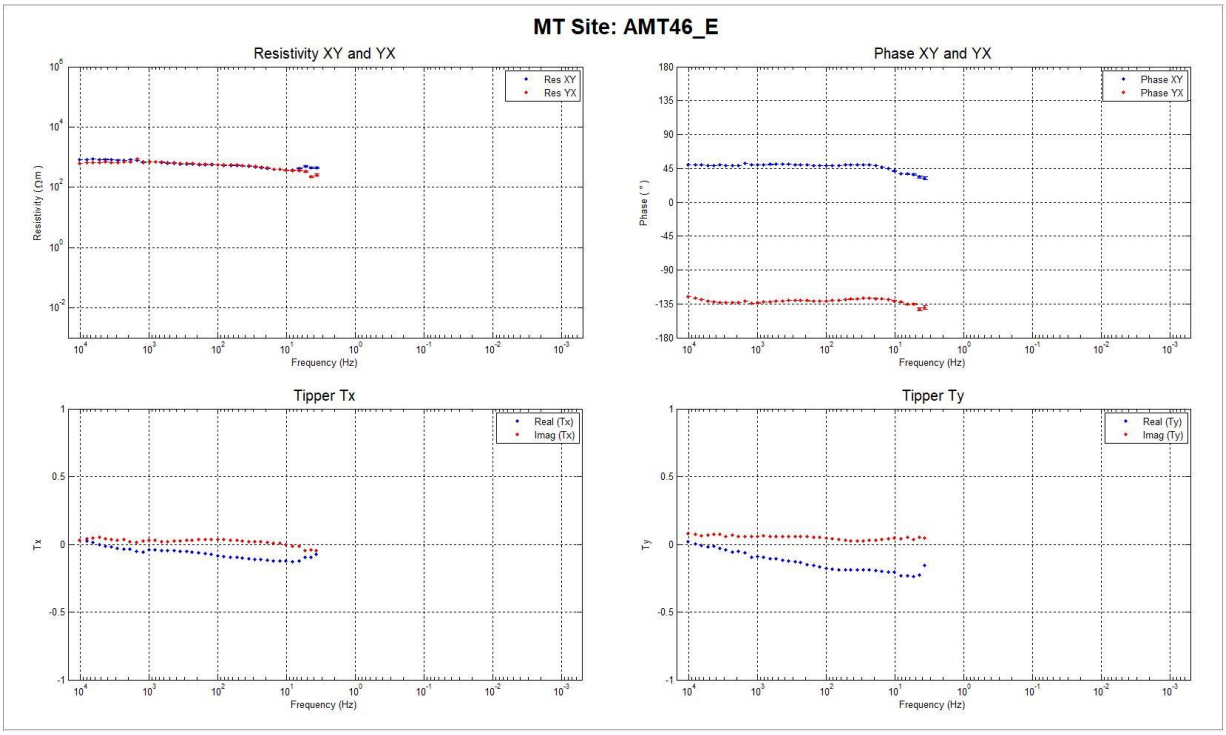
Resistivity XY and YX
Res XY
Res YX
Resistivity (Ωm)
Frequency (Hz)
Phase XY and YX
Phase XY
Phase YX
Phase (°)
Frequency (Hz)
Tipper Tx
Real (Tx)
Imag (Tx)
Tx
Frequency (Hz)
Tipper Ty
Real (Ty)
Imag (Ty)
Ty
Frequency (Hz)

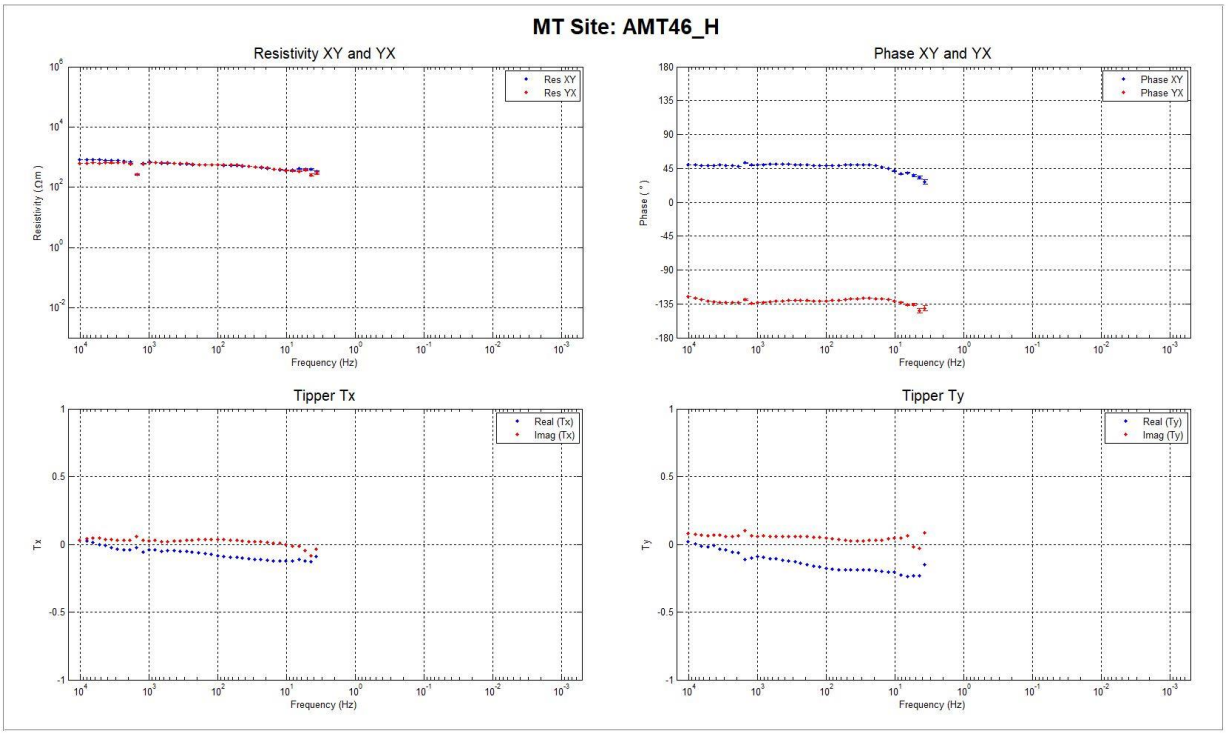

MT Site: AMT44_E
Resistivity XY and YX
Res XY
Res YX
Resistivity (Ωm)
Frequency (Hz)
Phase XY and YX
Phase XY
Phase YX
Phase (°)
Frequency (Hz)
Tipper Tx
Real (Tx)
Imag (Tx)
Tx
Frequency (Hz)
Tipper Ty
Real (Ty)
Imag (Ty)
Ty
Frequency (Hz)

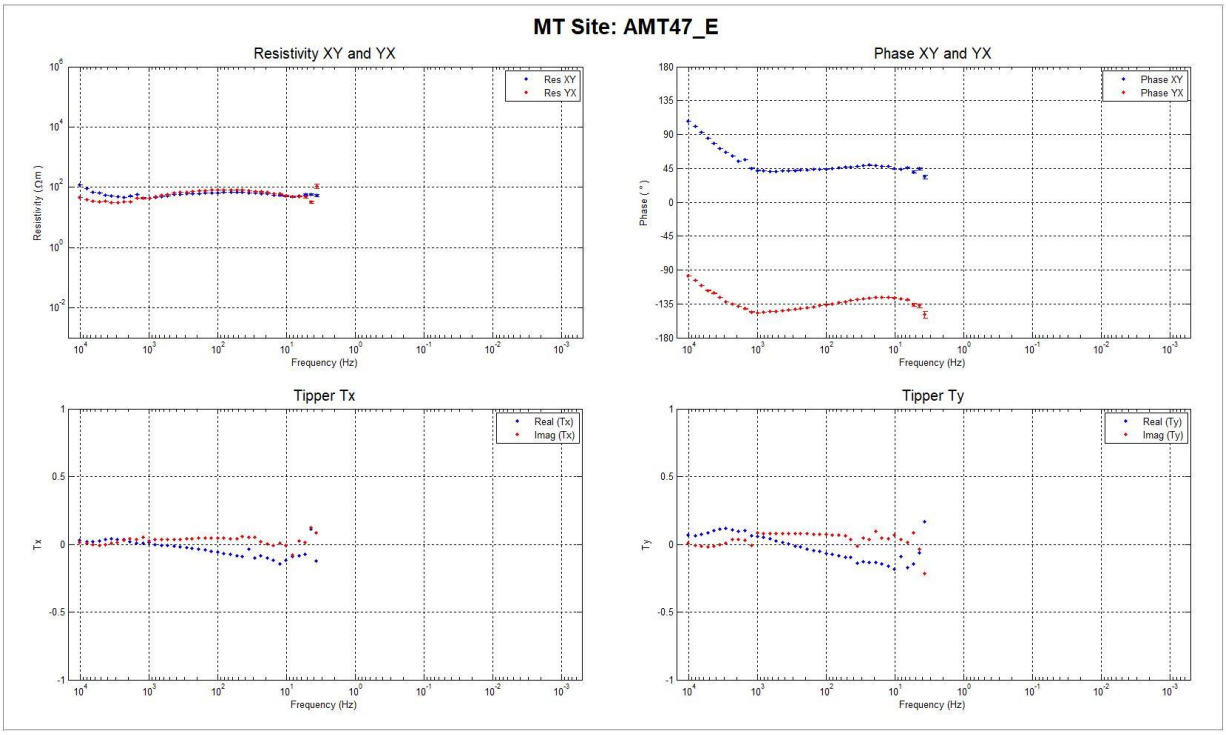

MT Site: AMT44_H
Resistivity XY and YX
Res XY
Res YX
Resistivity (Ωm)
Frequency (Hz)
Phase XY and YX
Phase XY
Phase YX
Phase (°)
Frequency (Hz)
Tipper Tx
Real (Tx)
Imag (Tx)
Tx
Frequency (Hz)
Tipper Ty
Real (Ty)
Imag (Ty)
Ty
Frequency (Hz)

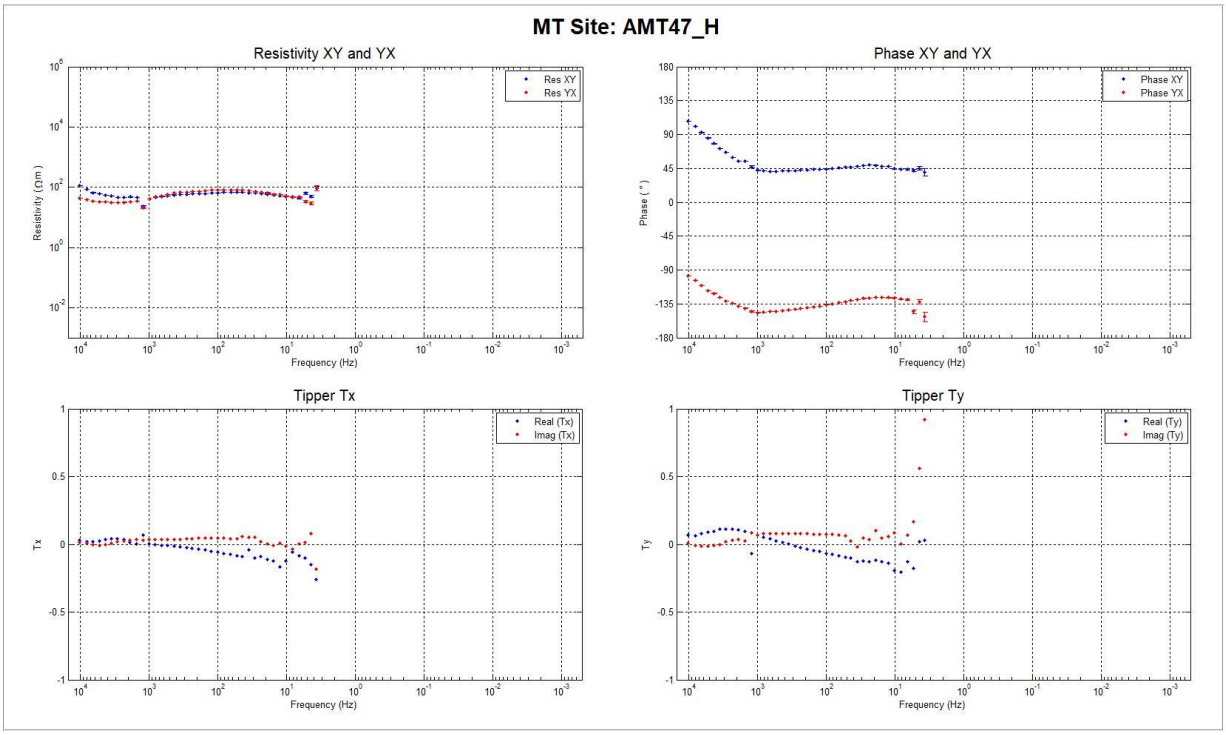

MT Site: AMT45_E
Resistivity XY and YX
Res XY
Res YX
Resistivity (Ωm)
Frequency (Hz)
Phase XY and YX
Phase XY
Phase YX
Phase (°)
Frequency (Hz)
Tipper Tx
Real (Tx)
Imag (Tx)
Tx
Frequency (Hz)
Tipper Ty
Real (Ty)
Imag (Ty)
Ty
Frequency (Hz)

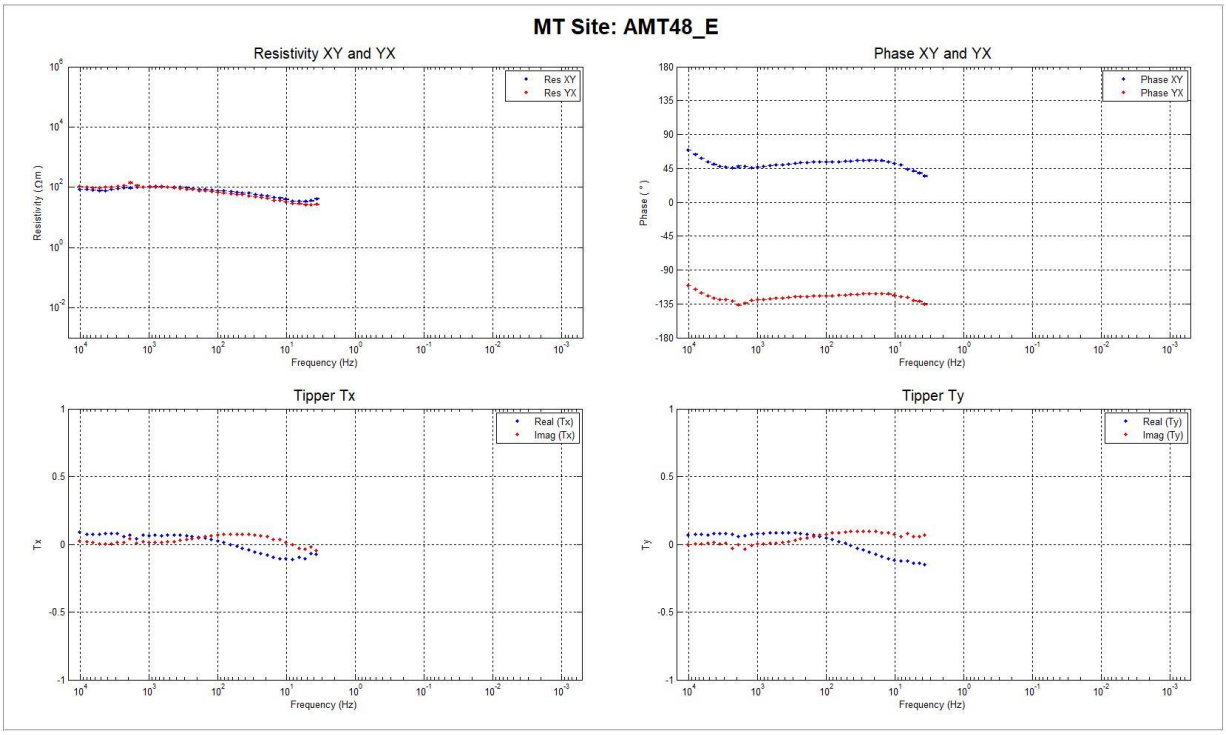

MT Site: AMT45_H
Resistivity XY and YX
Res XY
Res YX
Resistivity (Ωm)
Frequency (Hz)
Phase XY and YX
Phase XY
Phase YX
Phase (°)
Frequency (Hz)
Tipper Tx
Real (Tx)
Imag (Tx)
Tx
Frequency (Hz)
Tipper Ty
Real (Ty)
Imag (Ty)
Ty
Frequency (Hz)

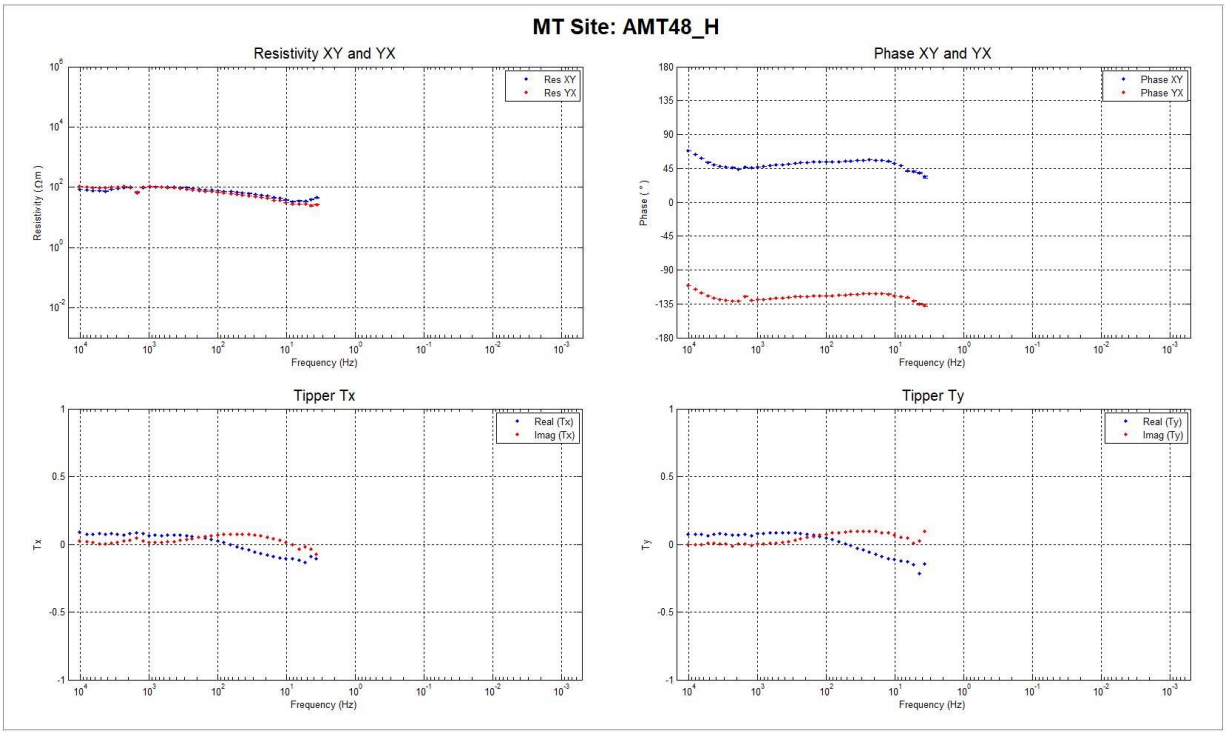

MT Site: AMT46_E
Resistivity XY and YX
Res XY
Res YX
Resistivity (Ωm)
Frequency (Hz)
Phase XY and YX
Phase XY
Phase YX
Phase (°)
Frequency (Hz)
Tipper Tx
Real (Tx)
Imag (Tx)
Tx
Frequency (Hz)
Tipper Ty
Real (Ty)
Imag (Ty)
Ty
Frequency (Hz)

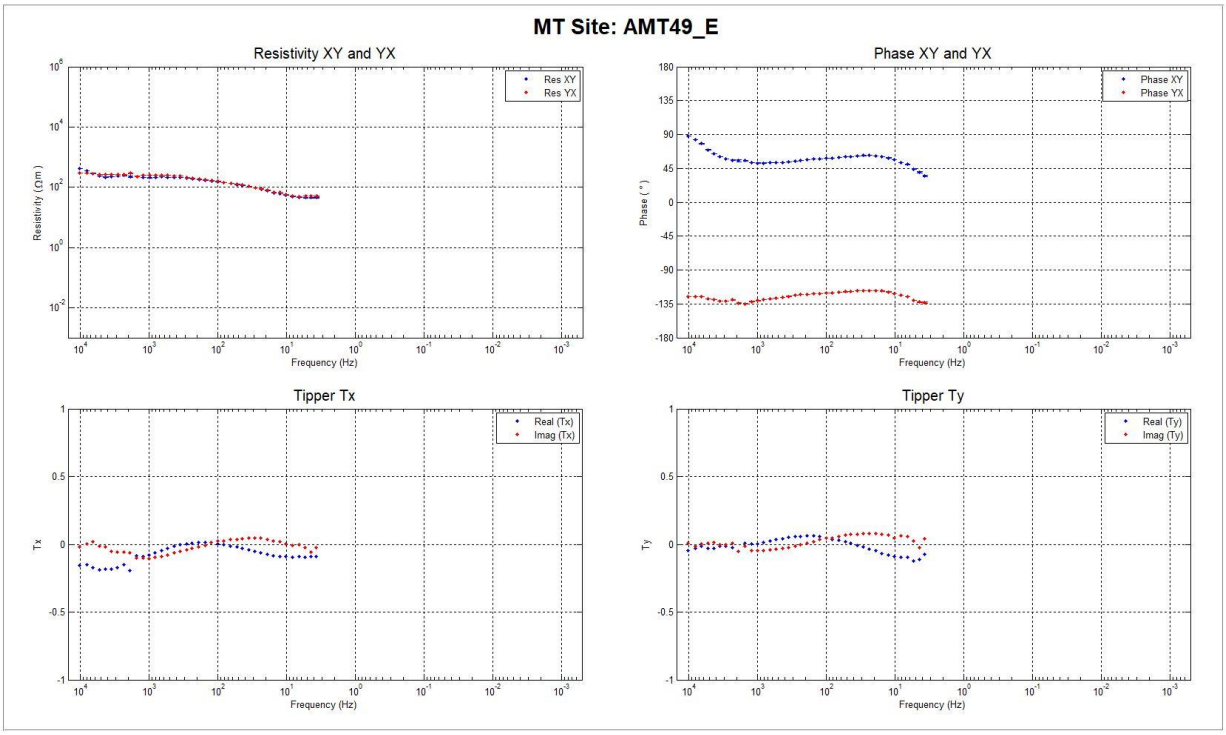

MT Site: AMT46_H
Resistivity XY and YX
Res XY
Res YX
Resistivity (Ωm)
Frequency (Hz)
Phase XY and YX
Phase XY
Phase YX
Phase (°)
Frequency (Hz)
Tipper Tx
Real (Tx)
Imag (Tx)
Tx
Frequency (Hz)
Tipper Ty
Real (Ty)
Imag (Ty)
Ty
Frequency (Hz)

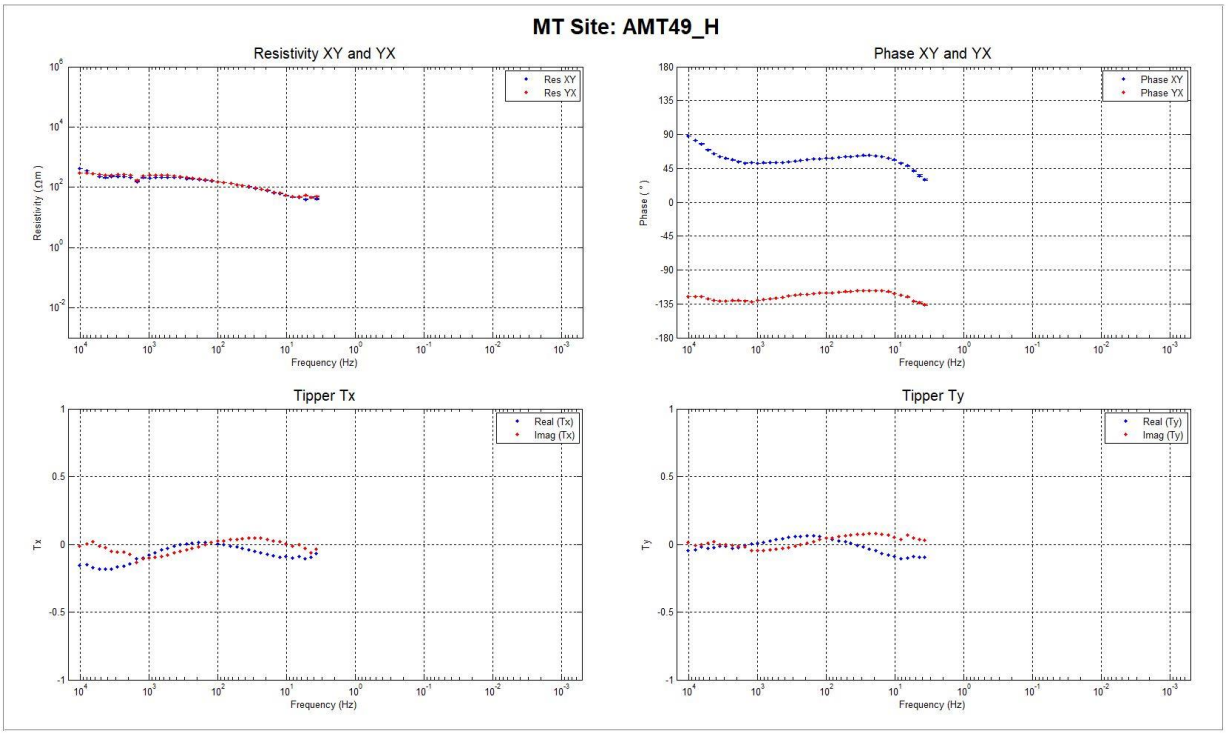

MT Site: AMT47_E
Resistivity XY and YX
Res XY
Res YX
Resistivity (Ωm)
Frequency (Hz)
Phase XY and YX
Phase XY
Phase YX
Phase (°)
Frequency (Hz)
Tipper Tx
Real (Tx)
Imag (Tx)
Tx
Frequency (Hz)
Tipper Ty
Real (Ty)
Imag (Ty)
Ty
Frequency (Hz)

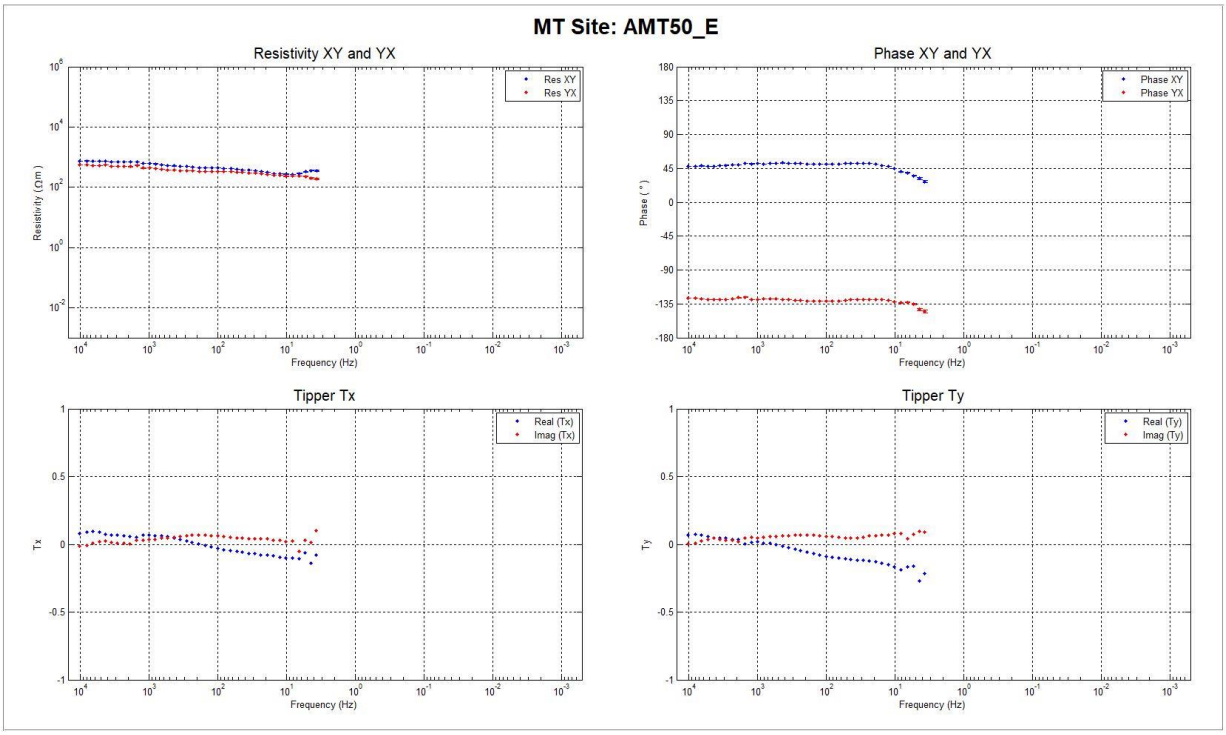

MT Site: AMT47_H
Resistivity XY and YX
Res XY
Res YX
Resistivity (Ωm)
Frequency (Hz)
Phase XY and YX
Phase XY
Phase YX
Phase (°)
Frequency (Hz)
Tipper Tx
Real (Tx)
Imag (Tx)
Tx
Frequency (Hz)
Tipper Ty
Real (Ty)
Imag (Ty)
Ty
Frequency (Hz)

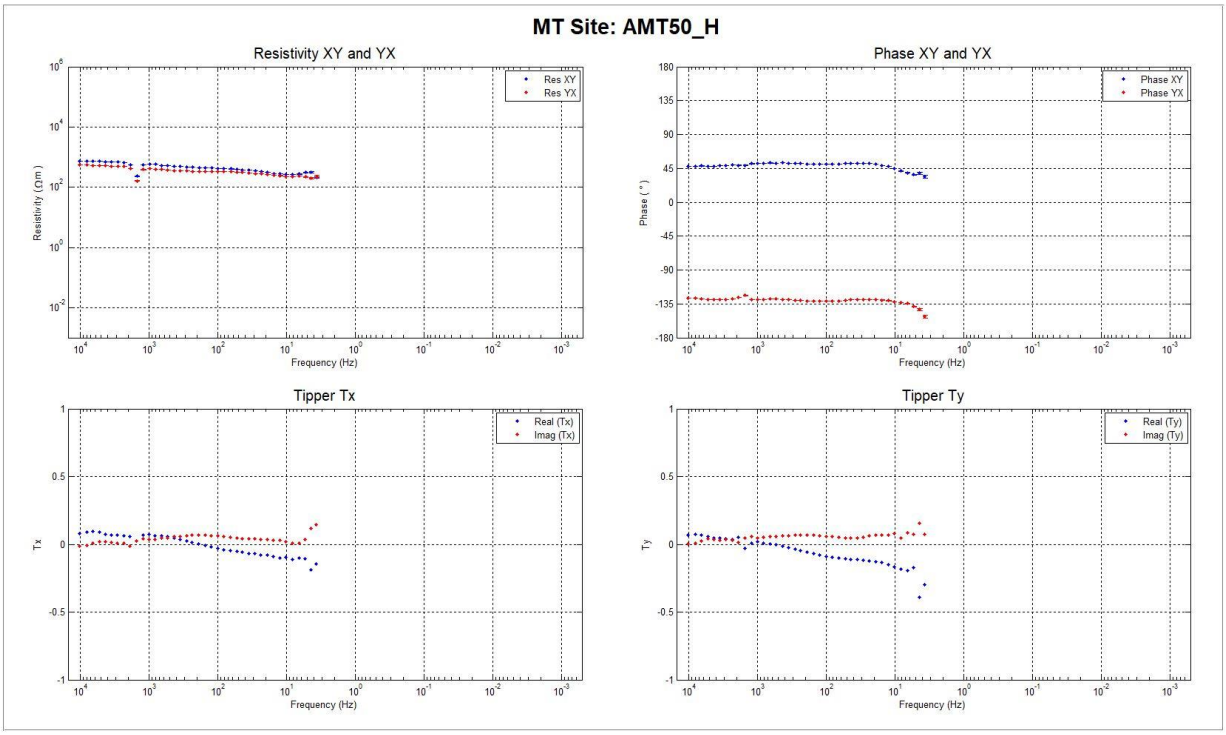

MT Site: AMT48_E
Resistivity XY and YX
Res XY
Res YX
Resistivity (Ωm)
Frequency (Hz)
Phase XY and YX
Phase XY
Phase YX
Phase (°)
Frequency (Hz)
Tipper Tx
Real (Tx)
Imag (Tx)
Tx
Frequency (Hz)
Tipper Ty
Real (Ty)
Imag (Ty)
Ty
Frequency (Hz)

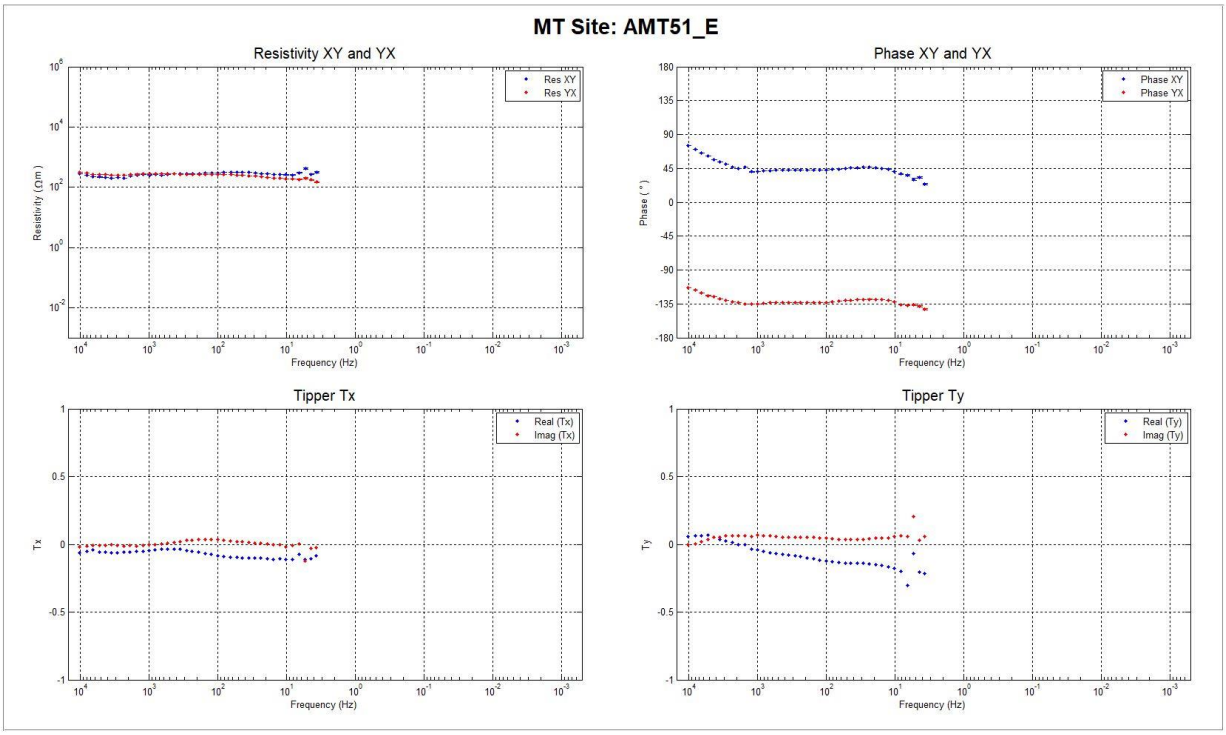

MT Site: AMT48_H
Resistivity XY and YX
Res XY
Res YX
Resistivity (Ωm)
Frequency (Hz)
Phase XY and YX
Phase XY
Phase YX
Phase (°)
Frequency (Hz)
Tipper Tx
Real (Tx)
Imag (Tx)
Tx
Frequency (Hz)
Tipper Ty
Real (Ty)
Imag (Ty)
Ty
Frequency (Hz)

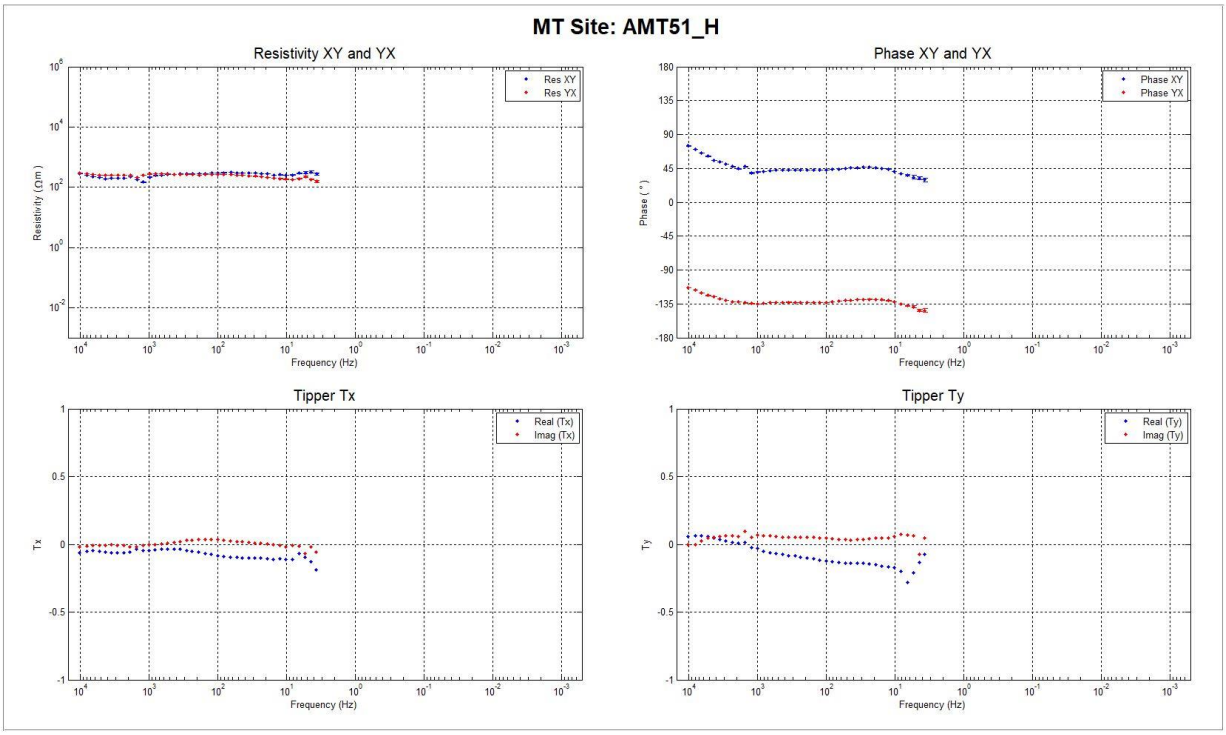

MT Site: AMT49_E
Resistivity XY and YX
Res XY
Res YX
Resistivity (Ωm)
Frequency (Hz)
Phase XY and YX
Phase XY
Phase YX
Phase (°)
Frequency (Hz)
Tipper Tx
Real (Tx)
Imag (Tx)
Tx
Frequency (Hz)
Tipper Ty
Real (Ty)
Imag (Ty)
Ty
Frequency (Hz)

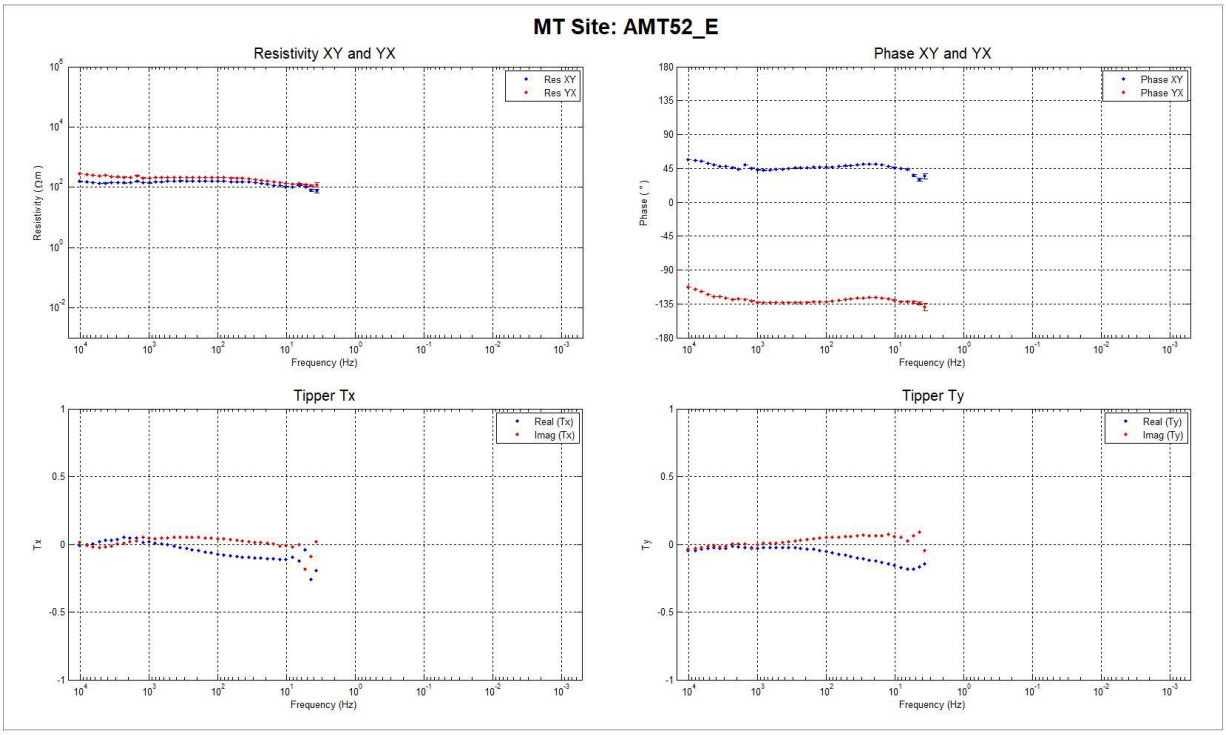

MT Site: AMT49_H
Resistivity XY and YX
Res XY
Res YX
Resistivity (Ωm)
Frequency (Hz)
Phase XY and YX
Phase XY
Phase YX
Phase (°)
Frequency (Hz)
Tipper Tx
Real (Tx)
Imag (Tx)
Tx
Frequency (Hz)
Tipper Ty
Real (Ty)
Imag (Ty)
Ty
Frequency (Hz)

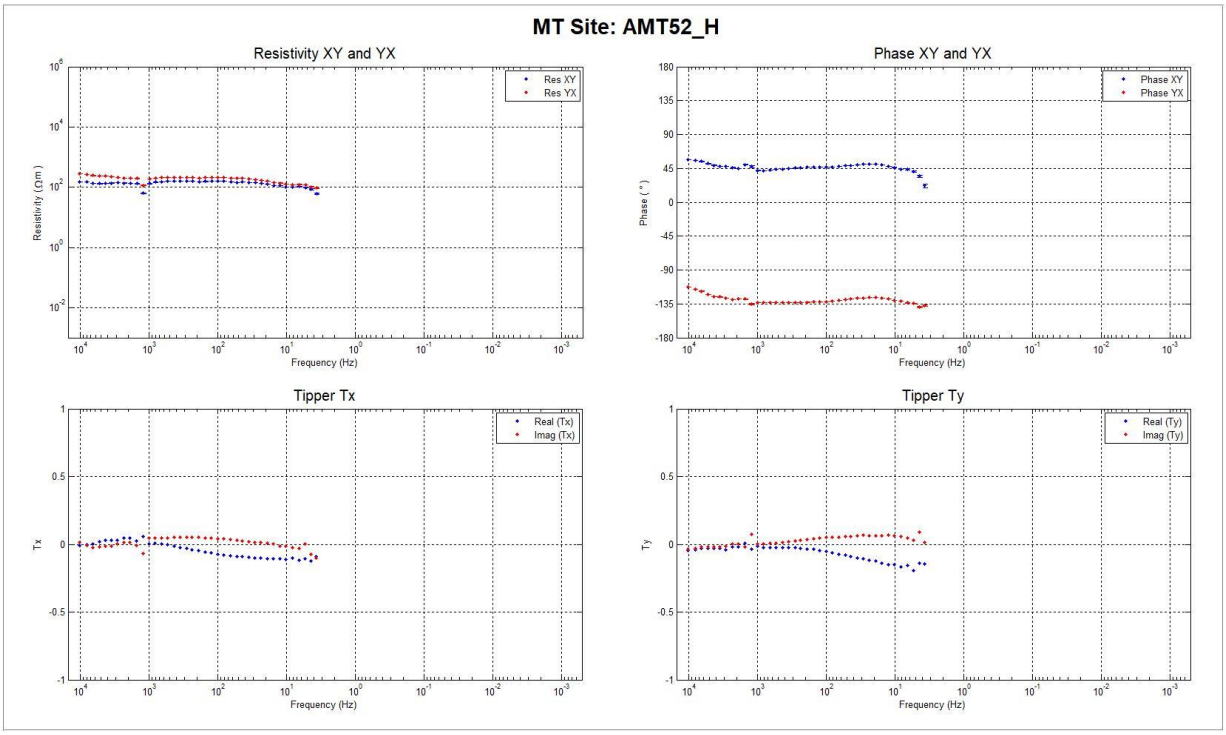

MT Site: AMT50_E
Resistivity XY and YX
Res XY
Res YX
Resistivity (Ωm)
Frequency (Hz)
Phase XY and YX
Phase XY
Phase YX
Phase (°)
Frequency (Hz)
Tipper Tx
Real (Tx)
Imag (Tx)
Tx
Frequency (Hz)
Tipper Ty
Real (Ty)
Imag (Ty)
Ty
Frequency (Hz)

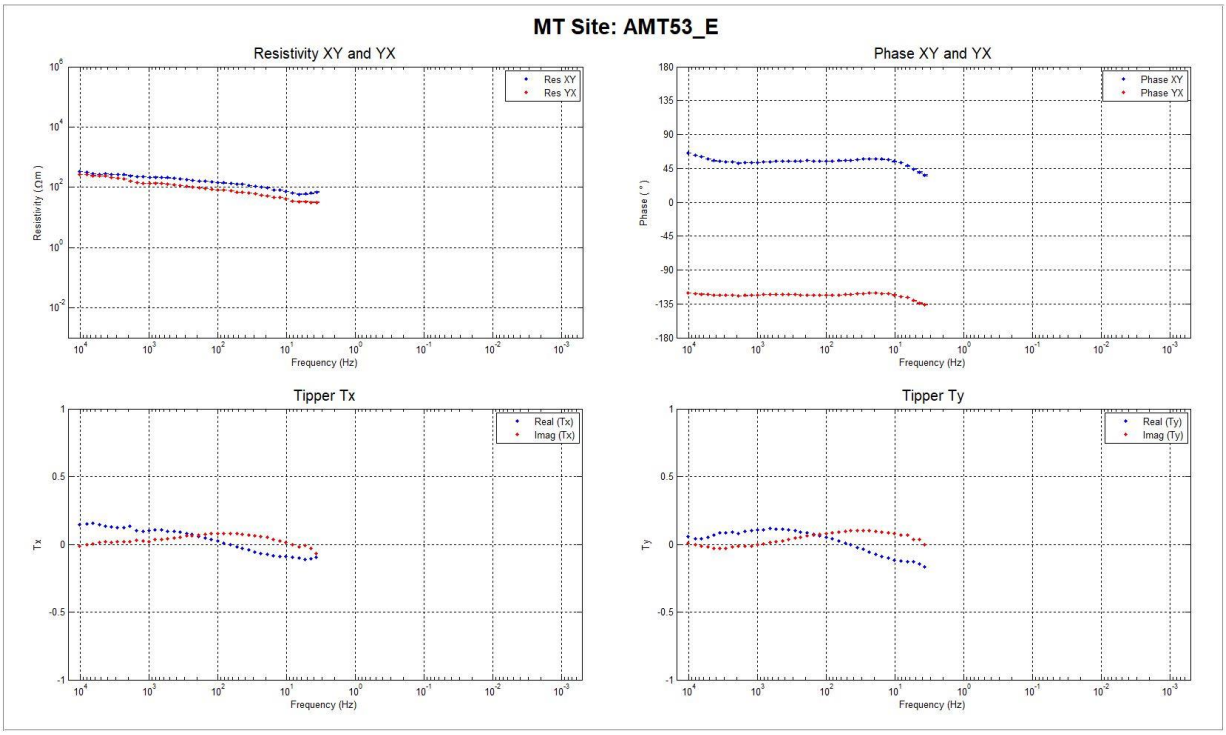

MT Site: AMT50_H
Resistivity XY and YX
Res XY
Res YX
Resistivity (Ωm)
Frequency (Hz)
Phase XY and YX
Phase XY
Phase YX
Phase (°)
Frequency (Hz)
Tipper Tx
Real (Tx)
Imag (Tx)
Tx
Frequency (Hz)
Tipper Ty
Real (Ty)
Imag (Ty)
Ty
Frequency (Hz)

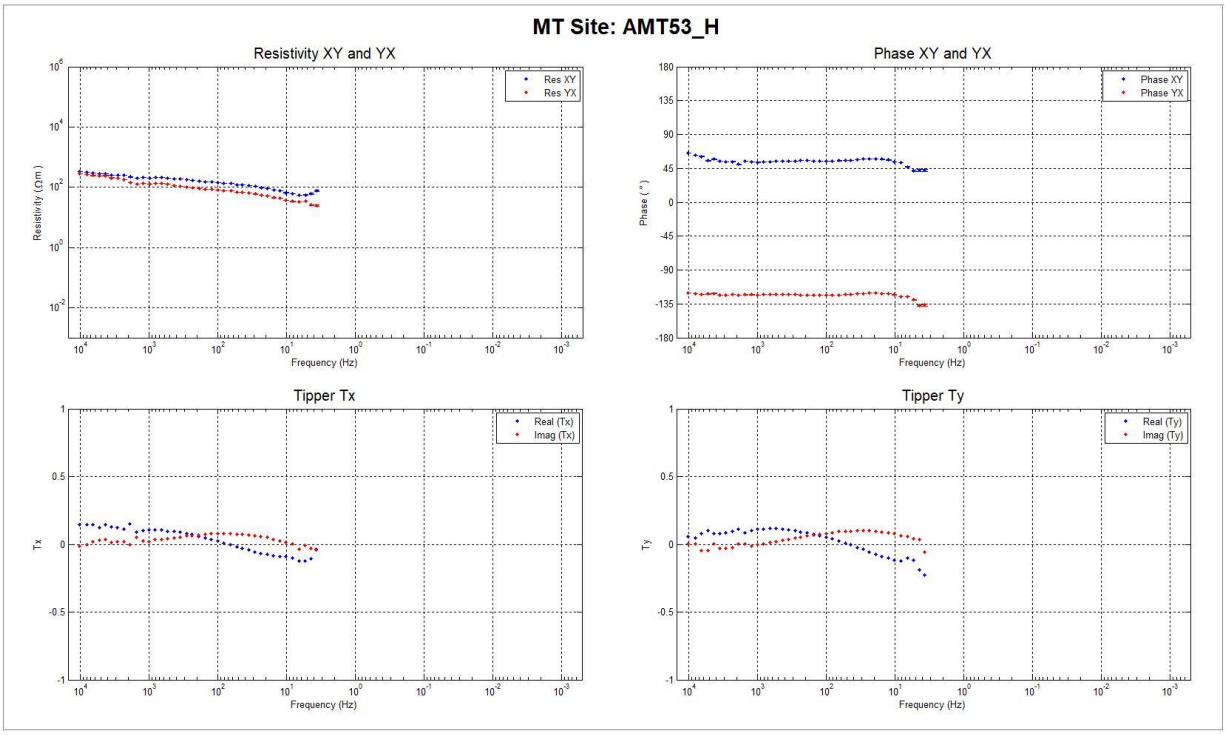

MT Site: AMT51_E
Resistivity XY and YX
Res XY
Res YX
Resistivity (Ωm)
Frequency (Hz)
Phase XY and YX
Phase XY
Phase YX
Phase (°)
Frequency (Hz)
Tipper Tx
Real (Tx)
Imag (Tx)
Tx
Frequency (Hz)
Tipper Ty
Real (Ty)
Imag (Ty)
Ty
Frequency (Hz)

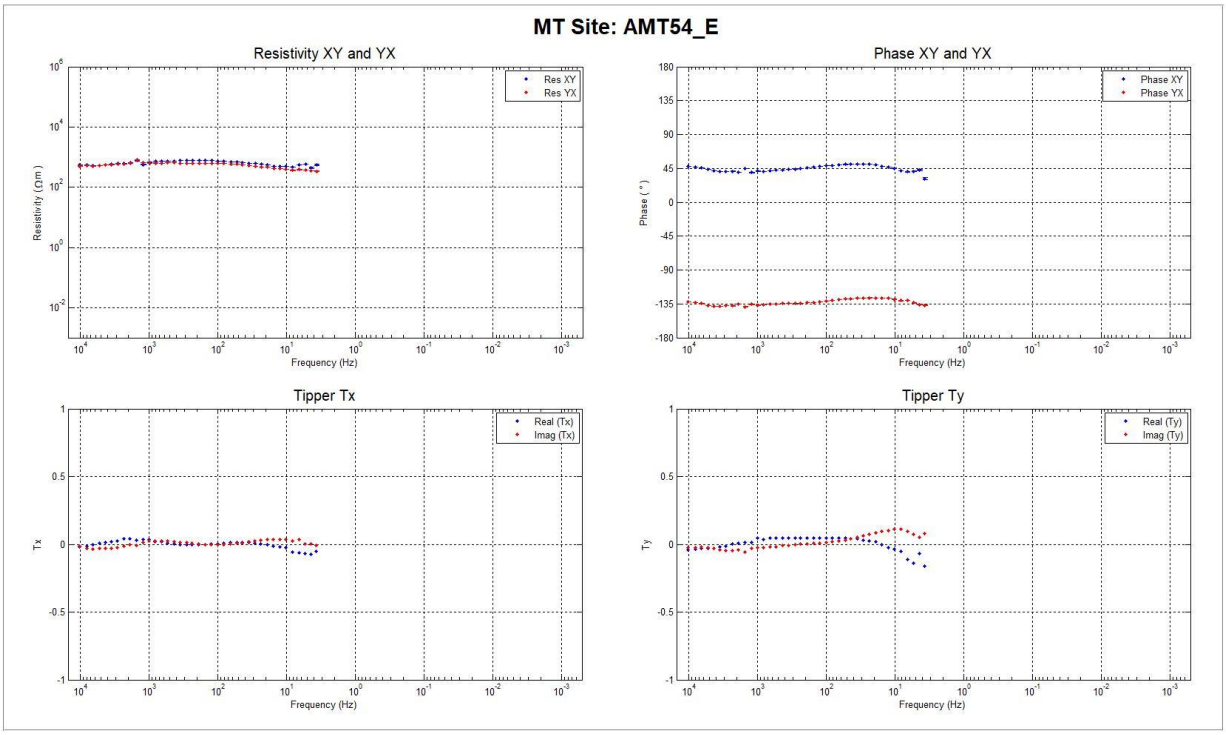

MT Site: AMT51_H
Resistivity XY and YX
Res XY
Res YX
Resistivity (Ωm)
Frequency (Hz)
Phase XY and YX
Phase XY
Phase YX
Phase (°)
Frequency (Hz)
Tipper Tx
Real (Tx)
Imag (Tx)
Tx
Frequency (Hz)
Tipper Ty
Real (Ty)
Imag (Ty)
Ty
Frequency (Hz)

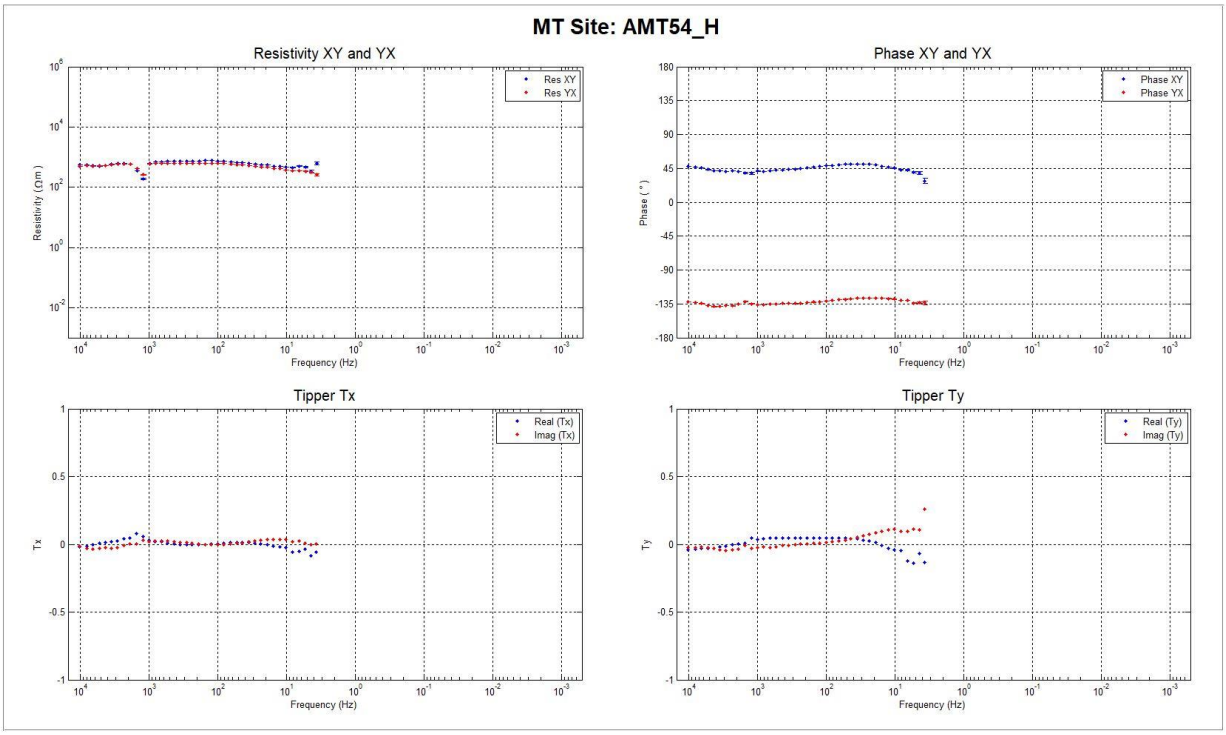

MT Site: AMT52_E
Resistivity XY and YX
Res XY
Res YX
Resistivity (Ωm)
Frequency (Hz)
Phase XY and YX
Phase XY
Phase YX
Phase (°)
Frequency (Hz)
Tipper Tx
Real (Tx)
Imag (Tx)
Tx
Frequency (Hz)
Tipper Ty
Real (Ty)
Imag (Ty)
Ty
Frequency (Hz)

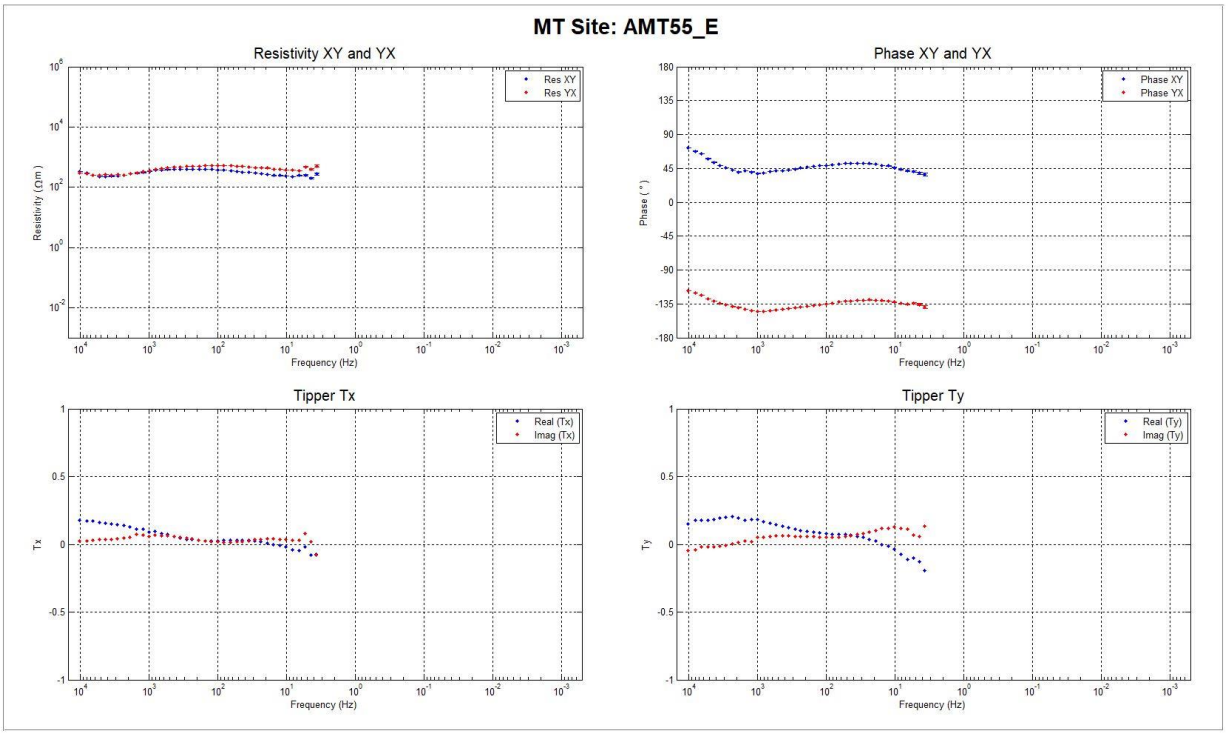

MT Site: AMT52_H
Resistivity XY and YX
Res XY
Res YX
Resistivity (Ωm)
Frequency (Hz)
Phase XY and YX
Phase XY
Phase YX
Phase (°)
Frequency (Hz)
Tipper Tx
Real (Tx)
Imag (Tx)
Tx
Frequency (Hz)
Tipper Ty
Real (Ty)
Imag (Ty)
Ty
Frequency (Hz)

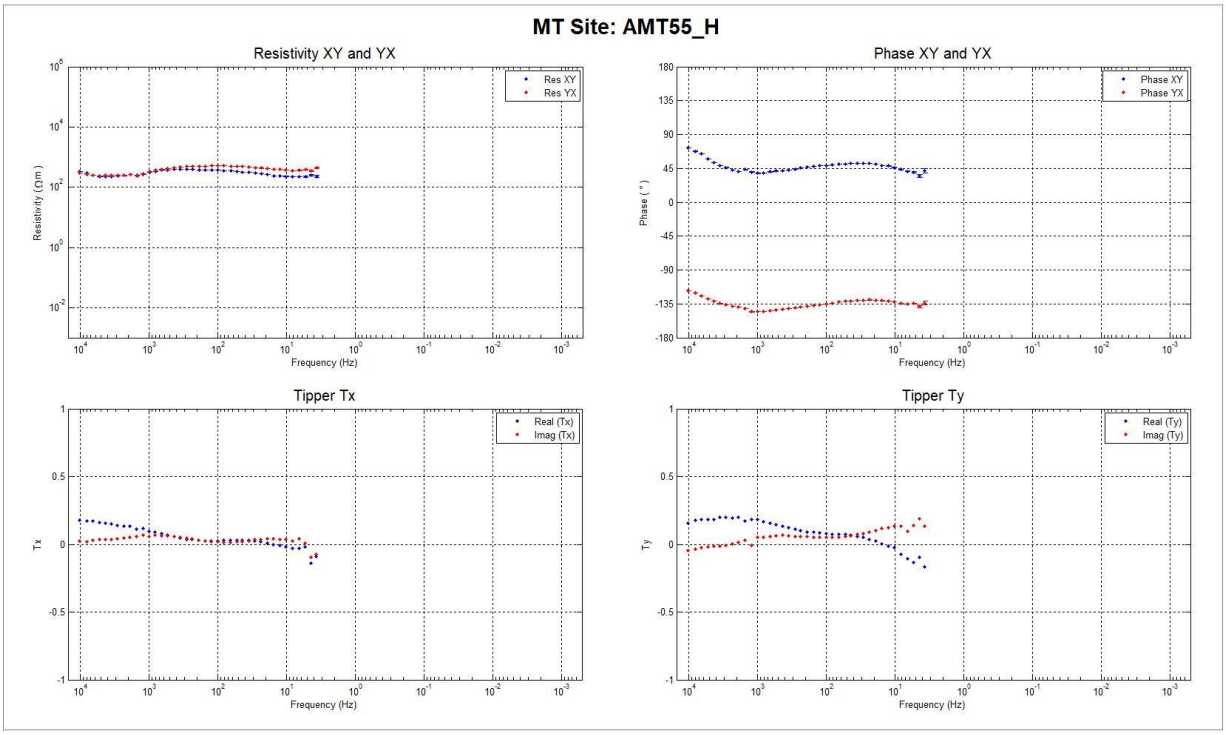

MT Site: AMT53_E
Resistivity XY and YX
Res XY
Res YX
Resistivity (Ωm)
Frequency (Hz)
Phase XY and YX
Phase XY
Phase YX
Phase (°)
Frequency (Hz)
Tipper Tx
Real (Tx)
Imag (Tx)
Tx
Frequency (Hz)
Tipper Ty
Real (Ty)
Imag (Ty)
Ty
Frequency (Hz)

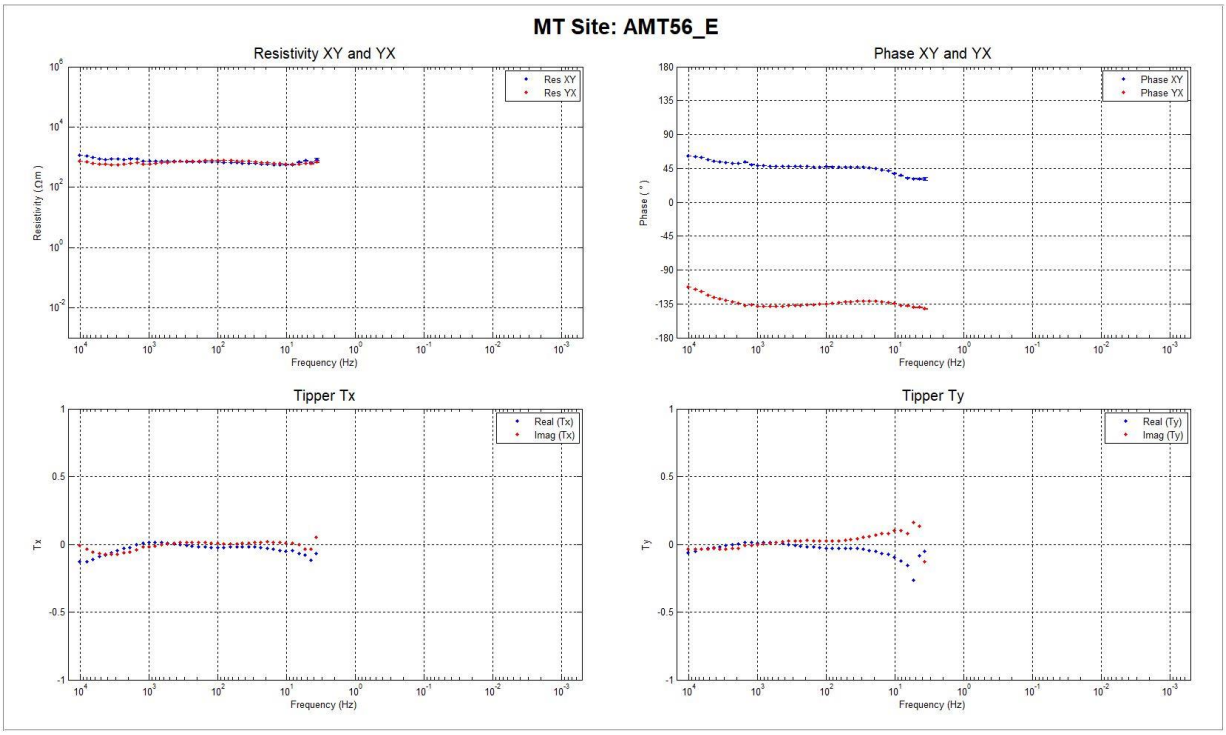

MT Site: AMT53_H
Resistivity XY and YX
Res XY
Res YX
Resistivity (Ωm)
Frequency (Hz)
Phase XY and YX
Phase XY
Phase YX
Phase (°)
Frequency (Hz)
Tipper Tx
Real (Tx)
Imag (Tx)
Tx
Frequency (Hz)
Tipper Ty
Real (Ty)
Imag (Ty)
Ty
Frequency (Hz)

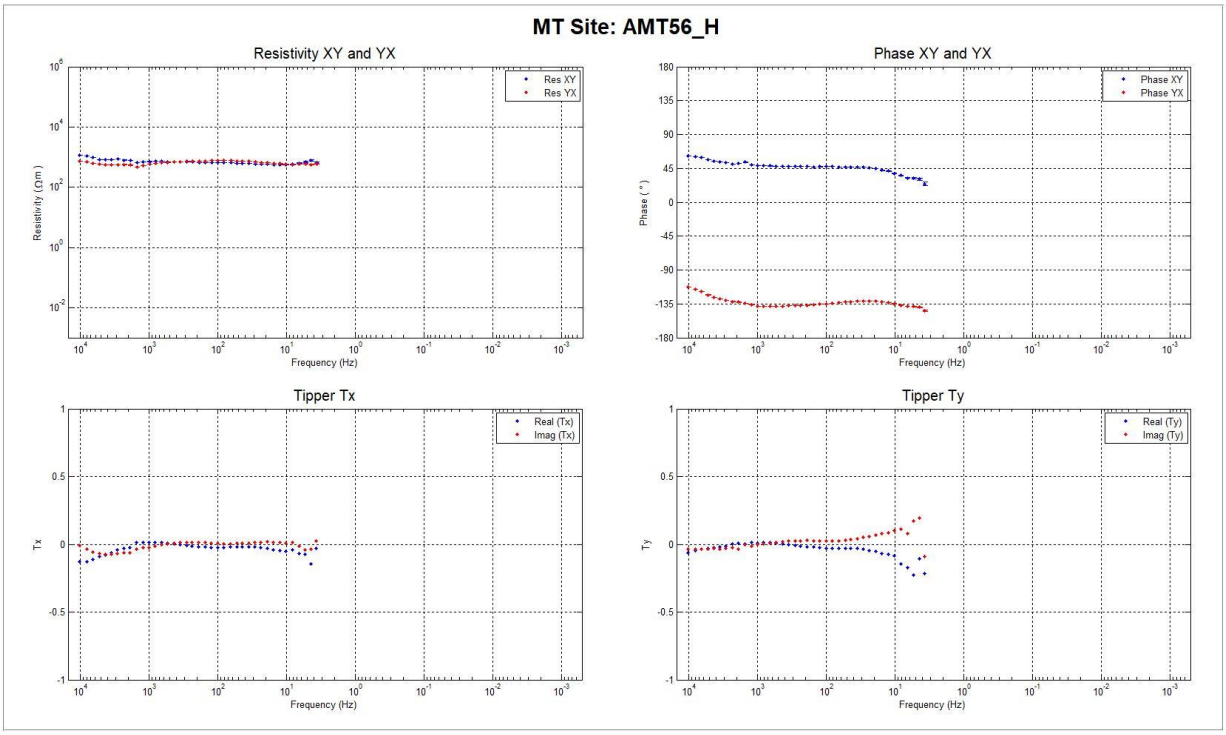

MT Site: AMT54_E
Resistivity XY and YX
Res XY
Res YX
Resistivity (Ωm)
Frequency (Hz)
Phase XY and YX
Phase XY
Phase YX
Phase (°)
Frequency (Hz)
Tipper Tx
Real (Tx)
Imag (Tx)
Tx
Frequency (Hz)
Tipper Ty
Real (Ty)
Imag (Ty)
Ty
Frequency (Hz)

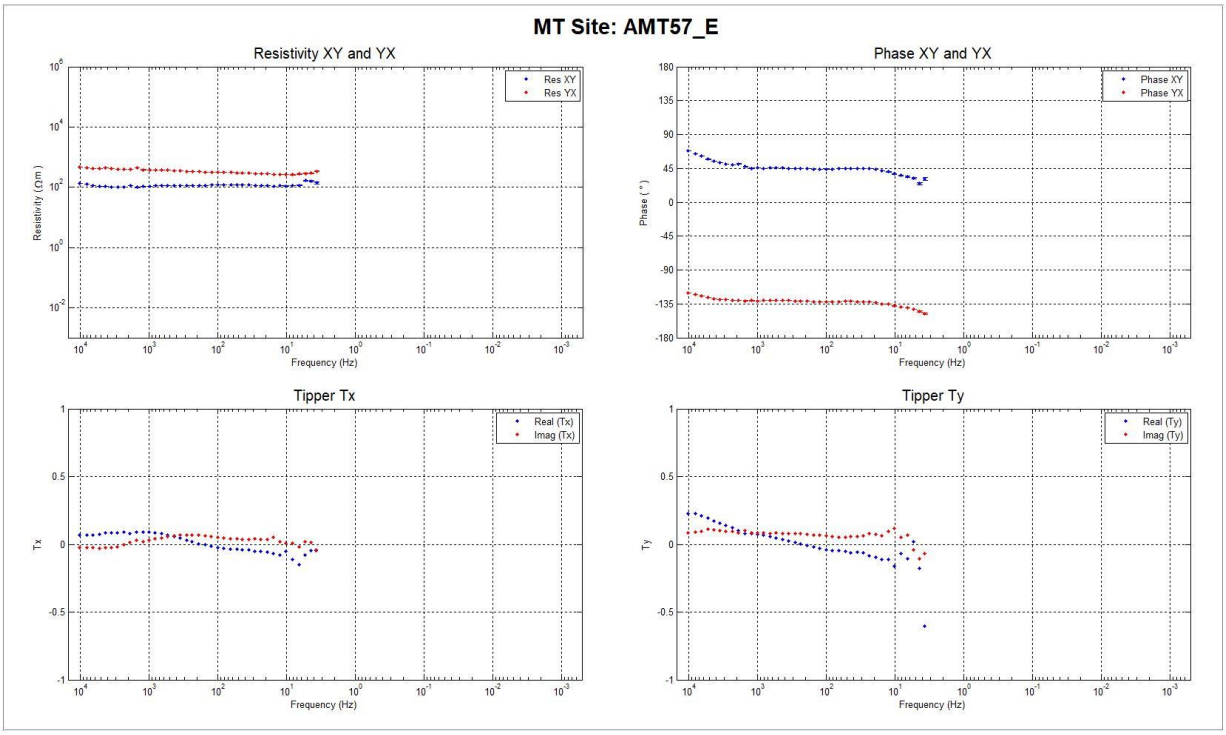

MT Site: AMT54_H
Resistivity XY and YX
Res XY
Res YX
Resistivity (Ωm)
Frequency (Hz)
Phase XY and YX
Phase XY
Phase YX
Phase (°)
Frequency (Hz)
Tipper Tx
Real (Tx)
Imag (Tx)
Tx
Frequency (Hz)
Tipper Ty
Real (Ty)
Imag (Ty)
Ty
Frequency (Hz)

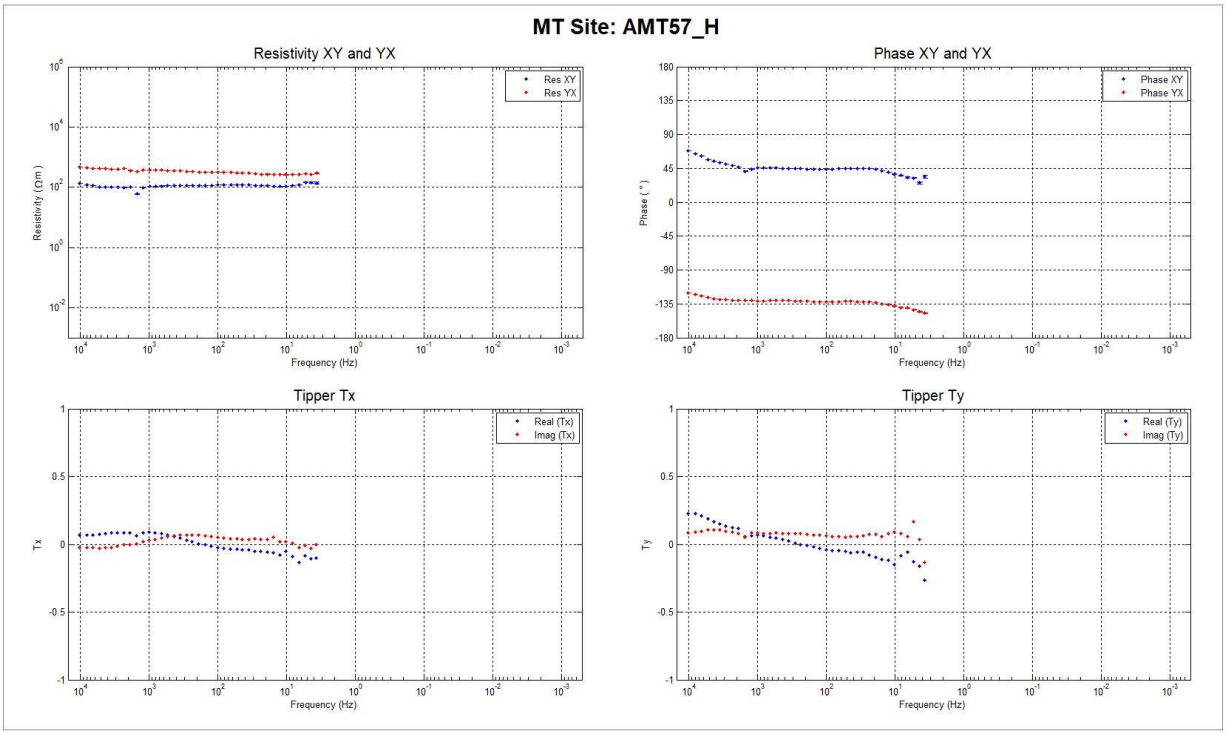

MT Site: AMT55_E
Resistivity XY and YX
Res XY
Res YX
Resistivity (Ωm)
Frequency (Hz)
Phase XY and YX
Phase XY
Phase YX
Phase (°)
Frequency (Hz)
Tipper Tx
Real (Tx)
Imag (Tx)
Tx
Frequency (Hz)
Tipper Ty
Real (Ty)
Imag (Ty)
Ty
Frequency (Hz)

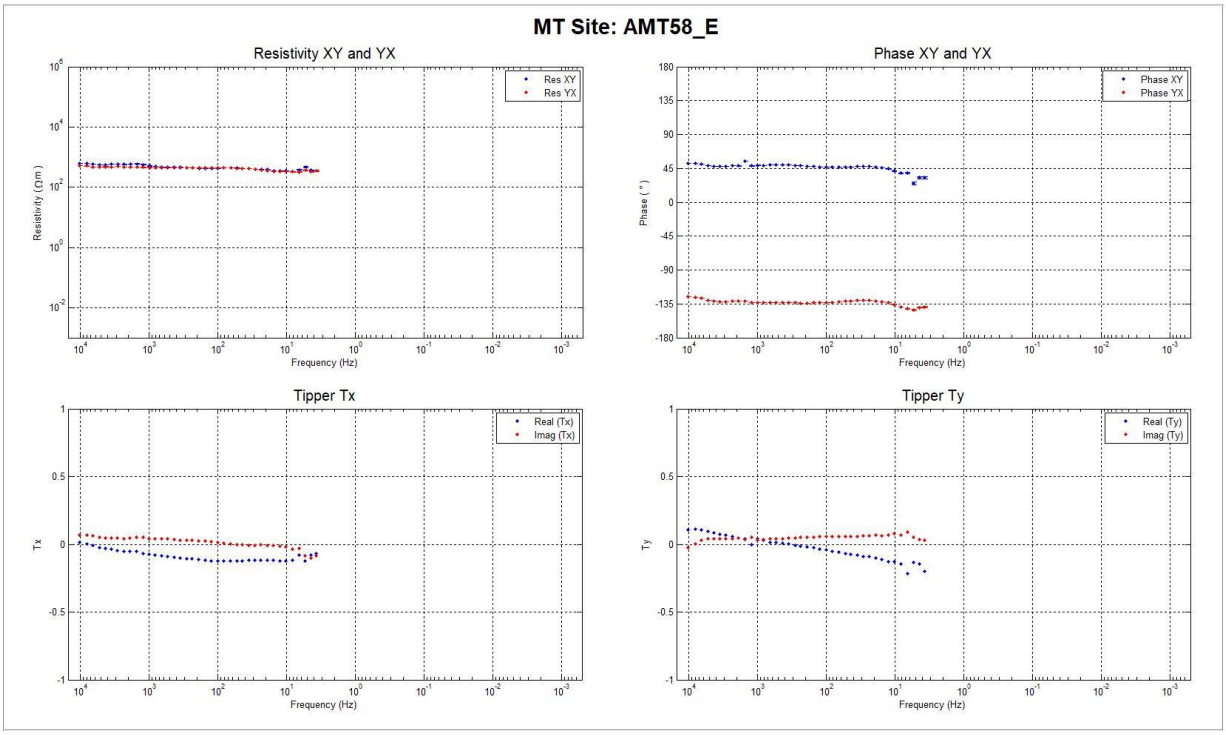

MT Site: AMT55_H
Resistivity XY and YX
Res XY
Res YX
Resistivity (Ωm)
Frequency (Hz)
Phase XY and YX
Phase XY
Phase YX
Phase (°)
Frequency (Hz)
Tipper Tx
Real (Tx)
Imag (Tx)
Tx
Frequency (Hz)
Tipper Ty
Real (Ty)
Imag (Ty)
Ty
Frequency (Hz)

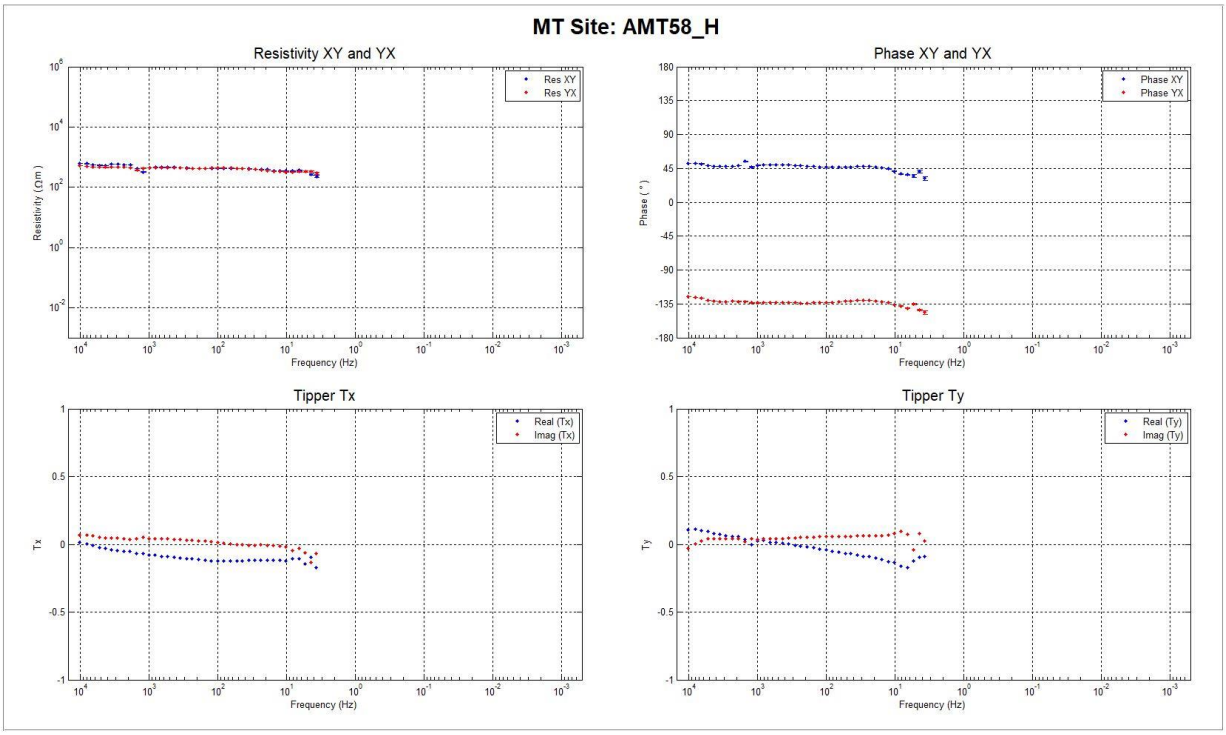

MT Site: AMT56_E
Resistivity XY and YX
Res XY
Res YX
Resistivity (Ωm)
Frequency (Hz)
Phase XY and YX
Phase XY
Phase YX
Phase (°)
Frequency (Hz)
Tipper Tx
Real (Tx)
Imag (Tx)
Tx
Frequency (Hz)
Tipper Ty
Real (Ty)
Imag (Ty)
Ty
Frequency (Hz)

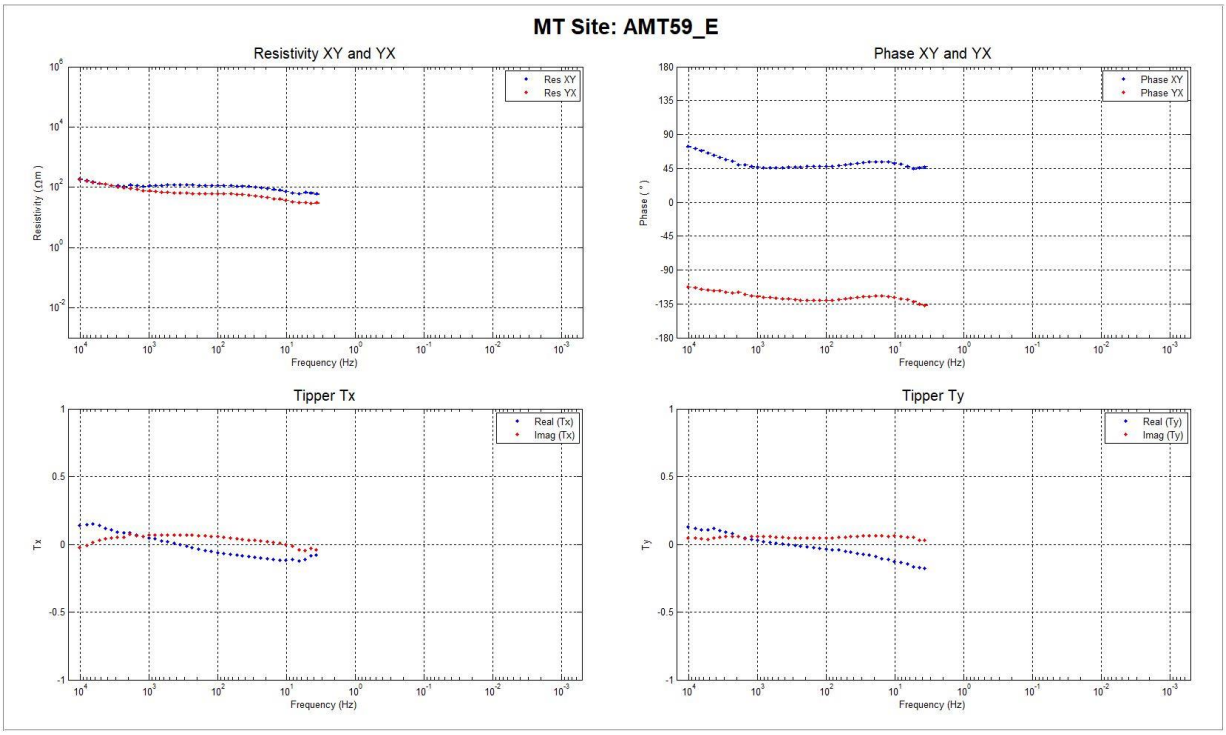

MT Site: AMT56_H
Resistivity XY and YX
Res XY
Res YX
Resistivity (Ωm)
Frequency (Hz)
Phase XY and YX
Phase XY
Phase YX
Phase (°)
Frequency (Hz)
Tipper Tx
Real (Tx)
Imag (Tx)
Tx
Frequency (Hz)
Tipper Ty
Real (Ty)
Imag (Ty)
Ty
Frequency (Hz)

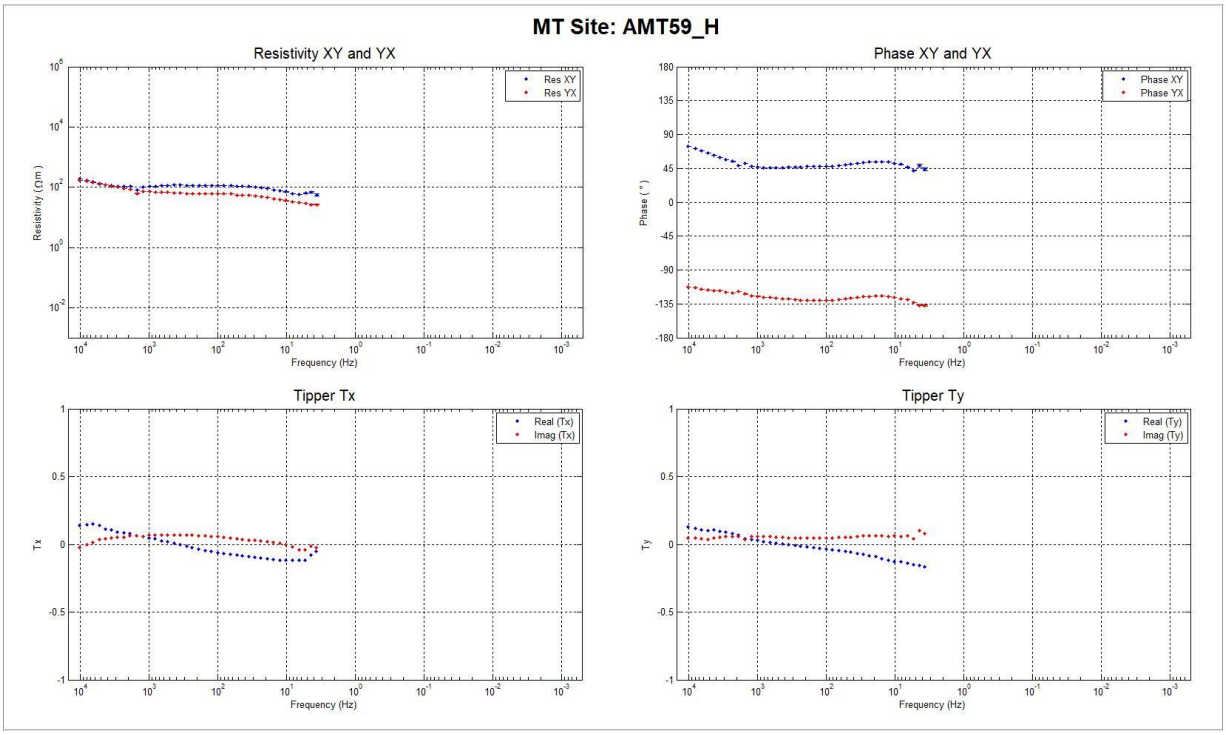

MT Site: AMT57_E
Resistivity XY and YX
Res XY
Res YX
Resistivity (Ωm)
Frequency (Hz)
Phase XY and YX
Phase XY
Phase YX
Phase (°)
Frequency (Hz)
Tipper Tx
Real (Tx)
Imag (Tx)
Tx
Frequency (Hz)
Tipper Ty
Real (Ty)
Imag (Ty)
Ty
Frequency (Hz)


MT Site: AMT57_H
Resistivity XY and YX
Res XY
Res YX
Resistivity (Ωm)
Frequency (Hz)
Phase XY and YX
Phase XY
Phase YX
Phase (°)
Frequency (Hz)
Tipper Tx
Real (Tx)
Imag (Tx)
Tx
Frequency (Hz)
Tipper Ty
Real (Ty)
Imag (Ty)
Ty
Frequency (Hz)


MT Site: AMT58_E
Resistivity XY and YX
Res XY
Res YX
Resistivity (Ωm)
Frequency (Hz)
Phase XY and YX
Phase XY
Phase YX
Phase (°)
Frequency (Hz)
Tipper Tx
Real (Tx)
Imag (Tx)
Tx
Frequency (Hz)
Tipper Ty
Real (Ty)
Imag (Ty)
Ty
Frequency (Hz)


MT Site: AMT58_H
Resistivity XY and YX
Res XY
Res YX
Resistivity (Ωm)
Frequency (Hz)
Phase XY and YX
Phase XY
Phase YX
Phase (°)
Frequency (Hz)
Tipper Tx
Real (Tx)
Imag (Tx)
Tx
Frequency (Hz)
Tipper Ty
Real (Ty)
Imag (Ty)
Ty
Frequency (Hz)


MT Site: AMT59_E
Resistivity XY and YX
Res XY
Res YX
Resistivity (Ωm)
Frequency (Hz)
Phase XY and YX
Phase XY
Phase YX
Phase (°)
Frequency (Hz)
Tipper Tx
Real (Tx)
Imag (Tx)
Tx
Frequency (Hz)
Tipper Ty
Real (Ty)
Imag (Ty)
Ty
Frequency (Hz)


MT Site: AMT59_H
Resistivity XY and YX
Res XY
Res YX
Resistivity (Ωm)
Frequency (Hz)
Phase XY and YX
Phase XY
Phase YX
Phase (°)
Frequency (Hz)
Tipper Tx
Real (Tx)
Imag (Tx)
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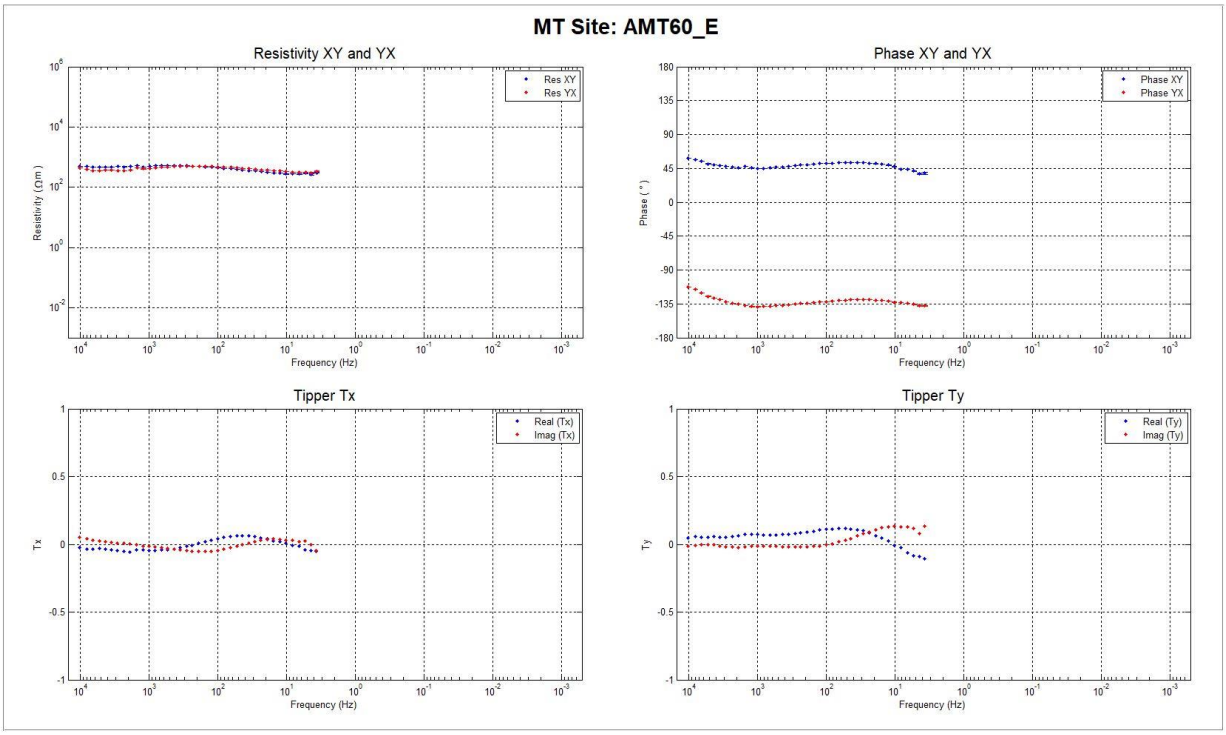
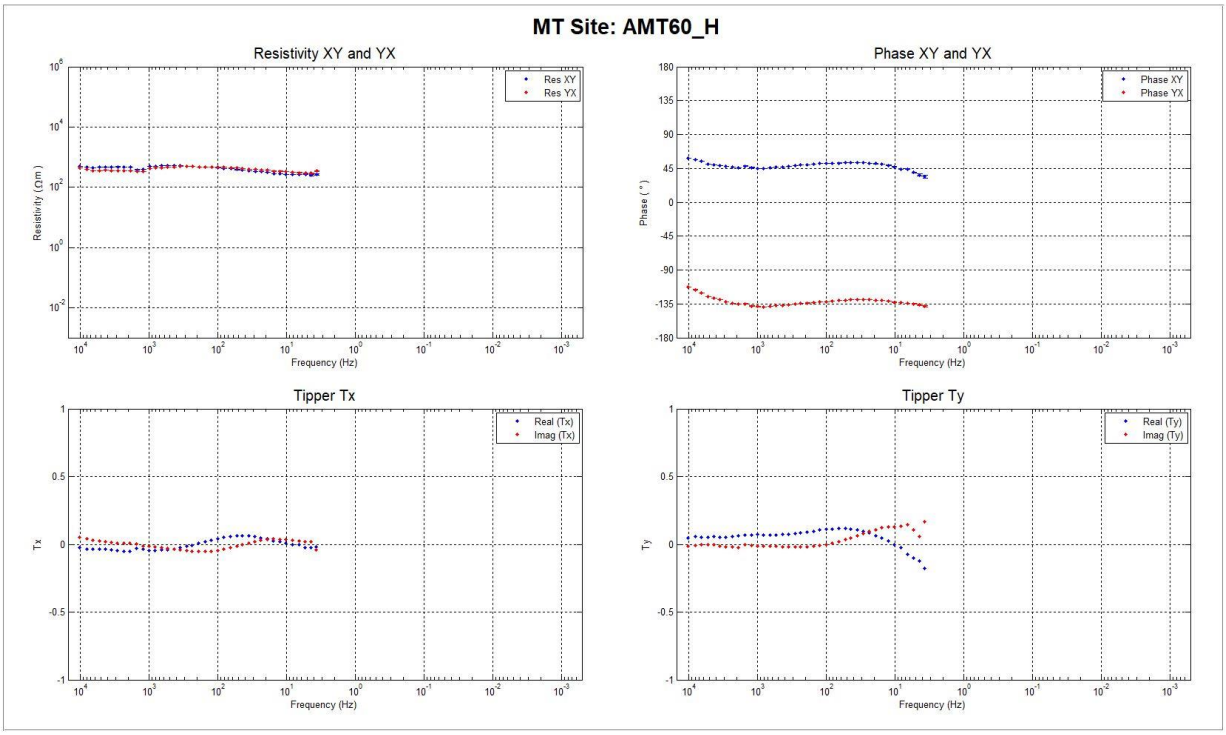
Frequency (Hz)
Tipper Ty
Real (Ty)
Imag (Ty)
Ty
Frequency (Hz)


MT Site: AMT60_E
Resistivity XY and YX
Res XY
Res YX
Resistivity (Ωm)
Frequency (Hz)
Phase XY and YX
Phase XY
Phase YX
Phase (°)
Frequency (Hz)
Tipper Tx
Real (Tx)
Imag (Tx)
Tx
Frequency (Hz)
Tipper Ty
Real (Ty)
Imag (Ty)
Ty
Frequency (Hz)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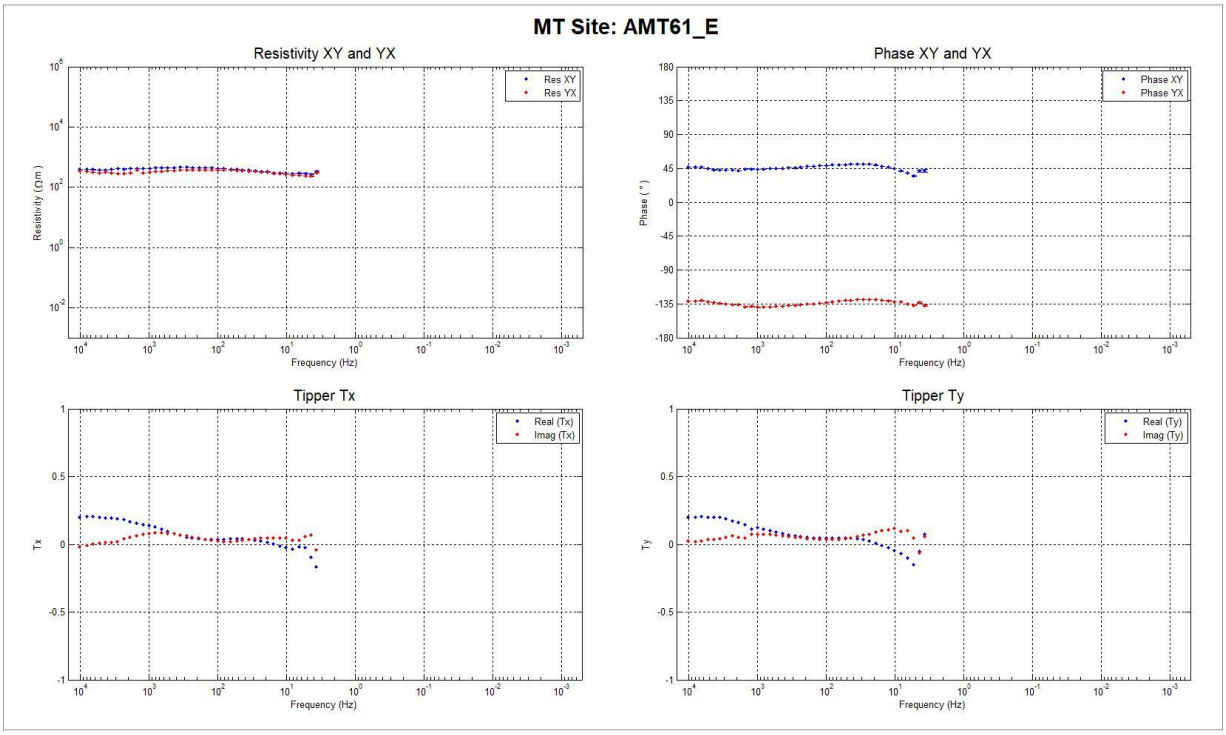
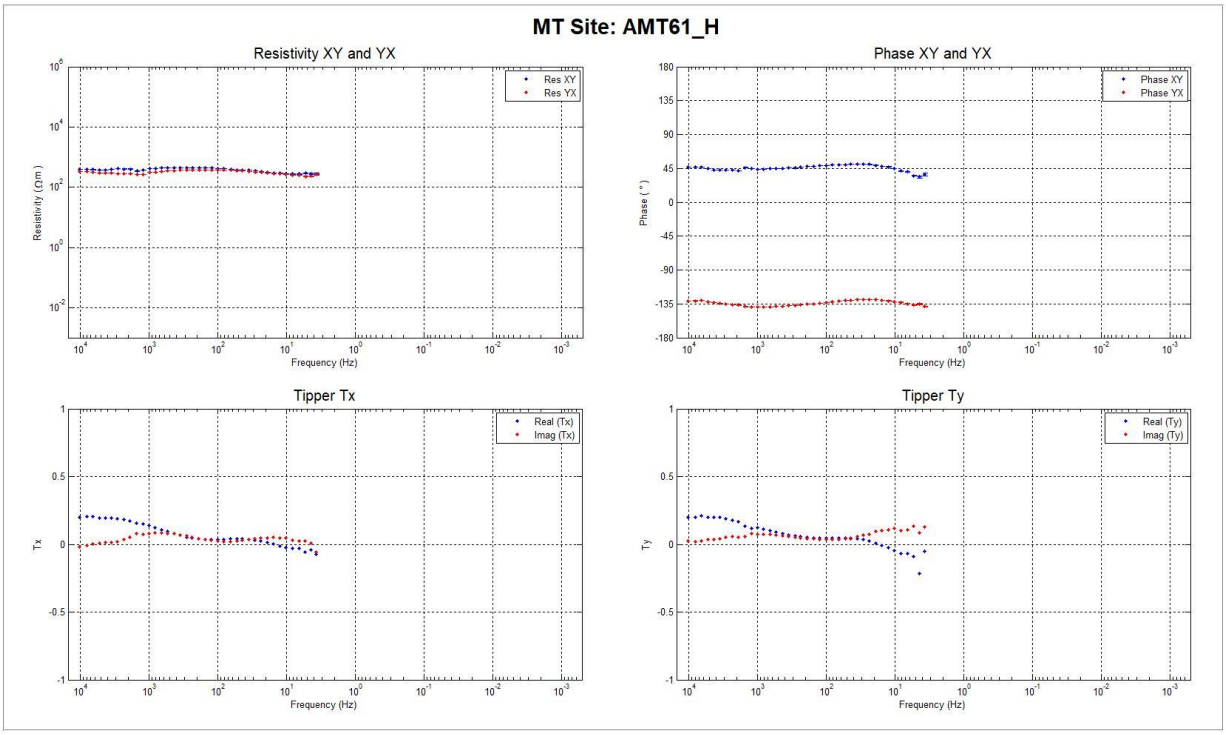
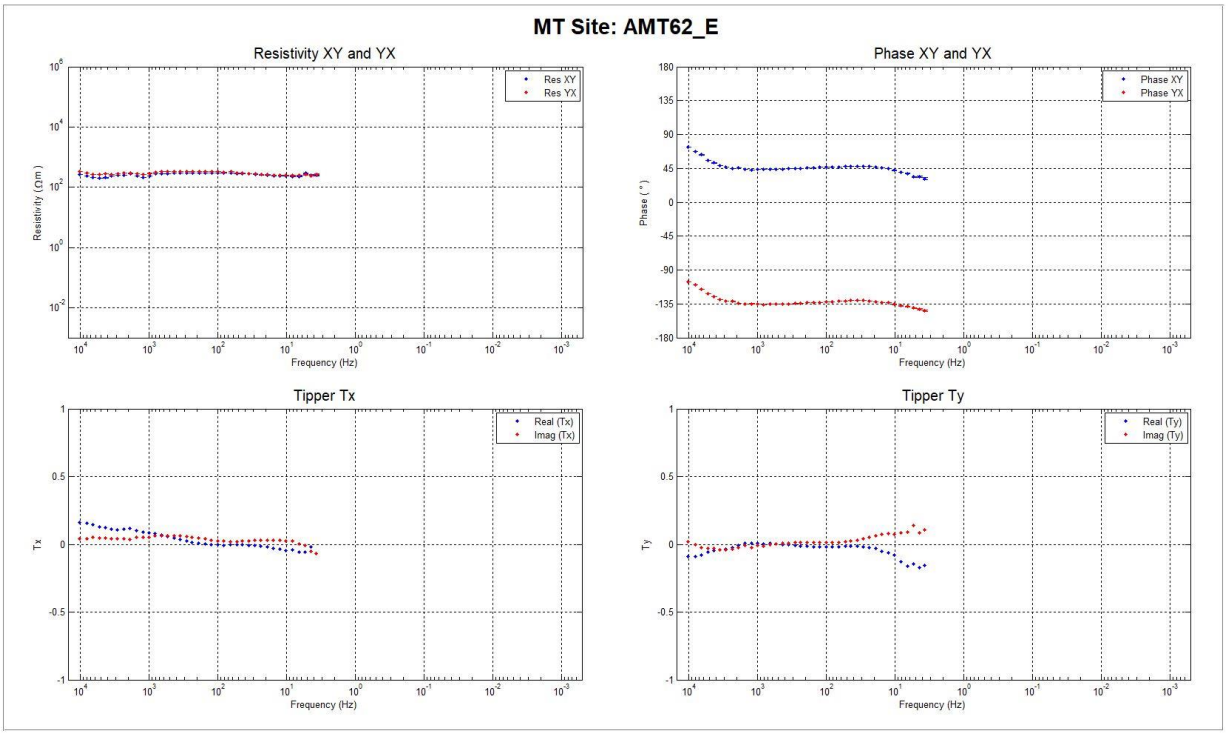
Resistivity XY and YX
Res XY
Res YX
Resistivity (Ωm)
Frequency (Hz)
Phase XY and YX
Phase XY
Phase YX
Phase (°)
Frequency (Hz)
Tipper Tx
Real (Tx)
Imag (Tx)
Tx
Frequency (Hz)
Tipper Ty
Real (Ty)
Imag (Ty)
Ty
Frequency (Hz)


MT Site: AMT61_E
Resistivity XY and YX
Res XY
Res YX
Resistivity (Ωm)
Frequency (Hz)
Phase XY and YX
Phase XY
Phase YX
Phase (°)
Frequency (Hz)
Tipper Tx
Real (Tx)
Imag (Tx)
Tx
Frequency (Hz)
Tipper Ty
Real (Ty)
Imag (Ty)
Ty
Frequency (Hz)


MT Site: AMT61_H
Resistivity XY and YX
Res XY
Res YX
Resistivity (Ωm)
Frequency (Hz)
Phase XY and YX
Phase XY
Phase YX
Phase (°)
Frequency (Hz)
Tipper Tx
Real (Tx)
Imag (Tx)
Tx
Frequency (Hz)
Tipper Ty
Real (Ty)
Imag (Ty)
Ty
Frequency (Hz)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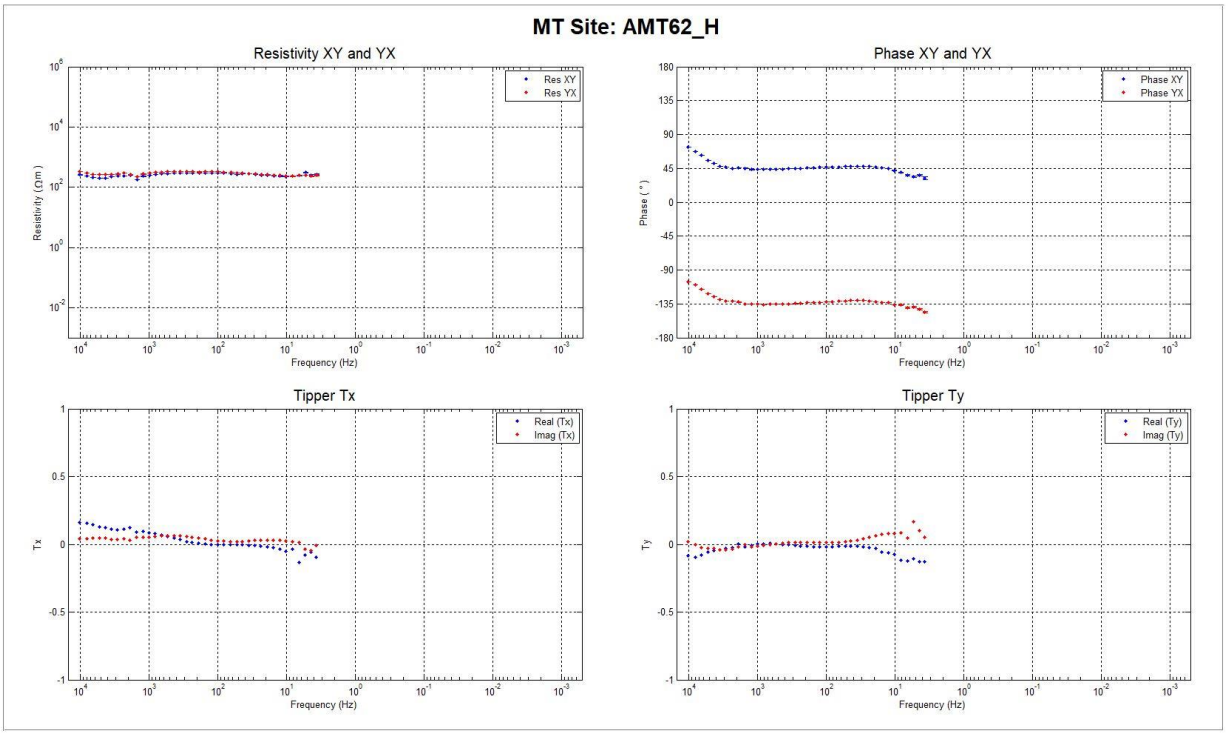
Res XY
Res YX
Resistivity (Ωm)
Frequency (Hz)
Phase XY and YX
Phase XY
Phase YX
Phase (°)
Frequency (Hz)
Tipper Tx
Real (Tx)
Imag (Tx)
Tx
Frequency (Hz)
Tipper Ty
Real (Ty)
Imag (Ty)
Ty
Frequency (Hz)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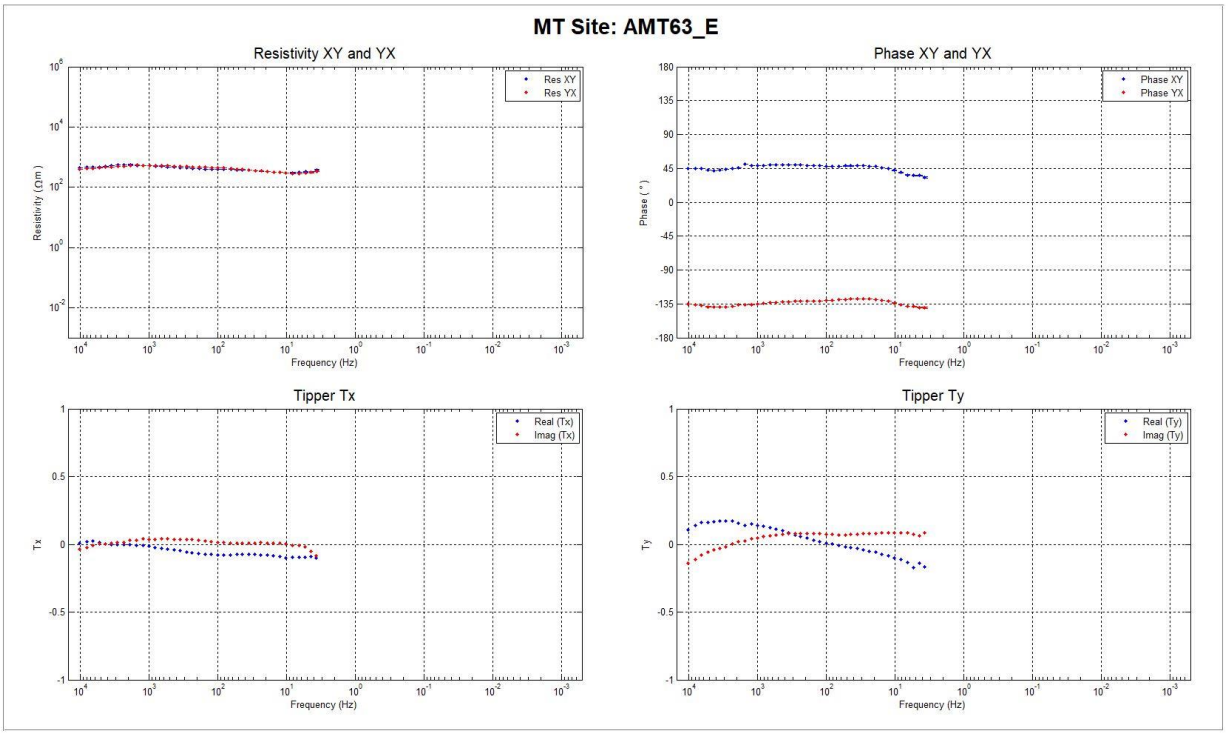
Resistivity XY and YX
Res XY
Res YX
Resistivity (Ωm)
Frequency (Hz)
Phase XY and YX
Phase XY
Phase YX
Phase (°)
Frequency (Hz)
Tipper Tx
Real (Tx)
Imag (Tx)
Tx
Frequency (Hz)
Tipper Ty
Real (Ty)
Imag (Ty)
Ty
Frequency (Hz)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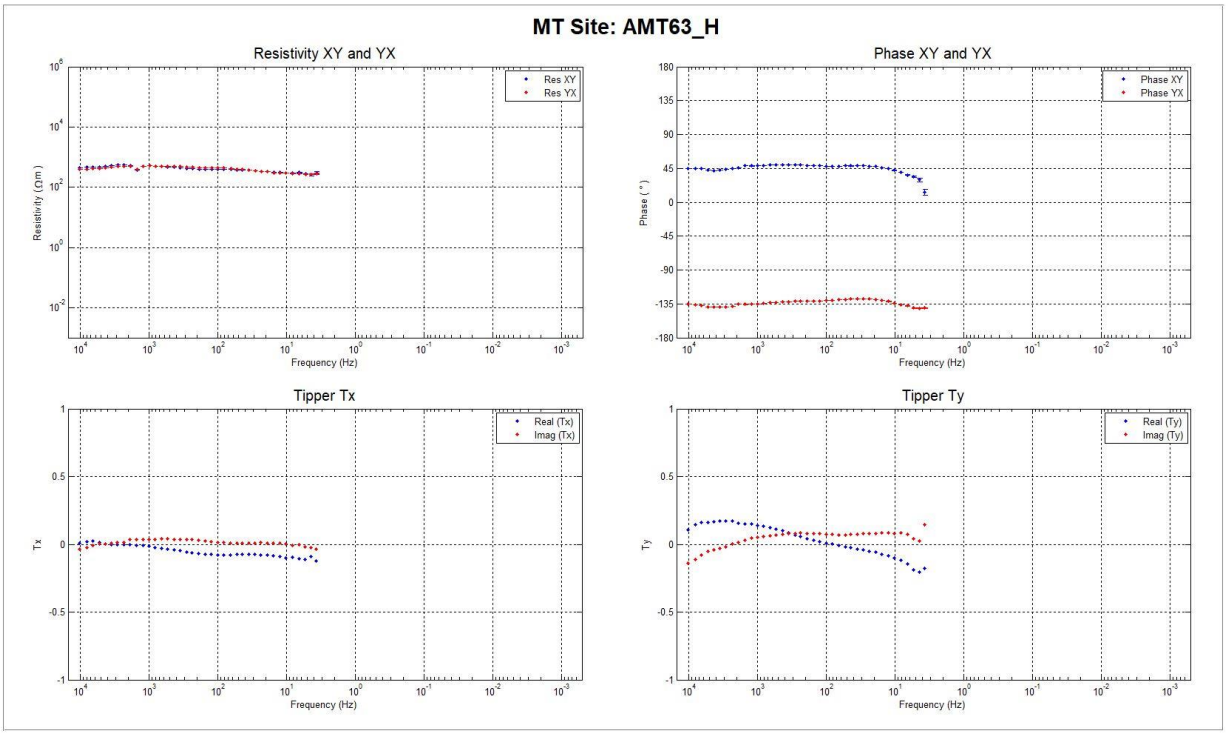
Resistivity XY and YX
Res XY
Res YX
Resistivity (Ωm)
Frequency (Hz)
Phase XY and YX
Phase XY
Phase YX
Phase (°)
Frequency (Hz)
Tipper Tx
Real (Tx)
Imag (Tx)
Tx
Frequency (Hz)
Tipper Ty
Real (Ty)
Imag (Ty)
Ty
Frequency (Hz)


MT Site: AMT63_H
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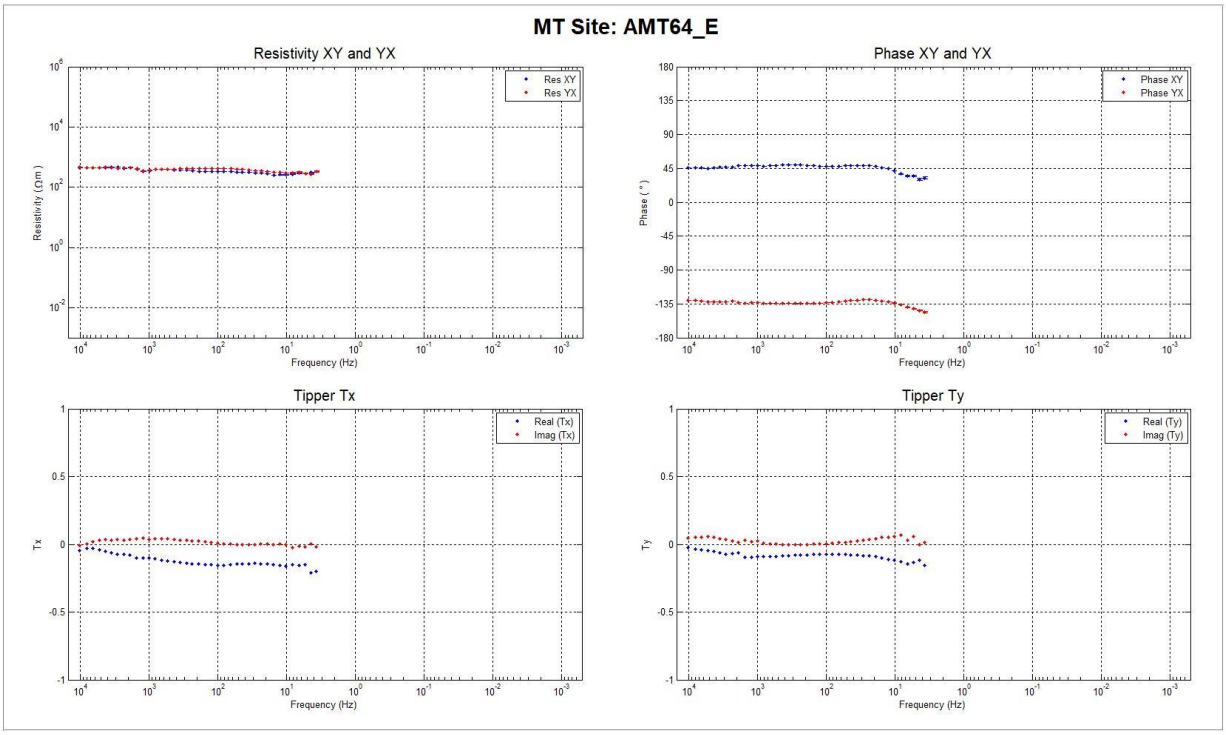
Res YX
Resistivity (Ωm)
Frequency (Hz)
Phase XY and YX
Phase XY
Phase YX
Phase (°)
Frequency (Hz)
Tipper Tx
Real (Tx)
Imag (Tx)
Tx
Frequency (Hz)
Tipper Ty
Real (Ty)
Imag (Ty)
Ty
Frequency (Hz)


MT Site: AMT64_E
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Res XY
Res YX
Resistivity (Ωm)
Frequency (Hz)
Phase XY and YX
Phase XY
Phase YX
Phase (°)
Frequency (Hz)
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Imag (Tx)
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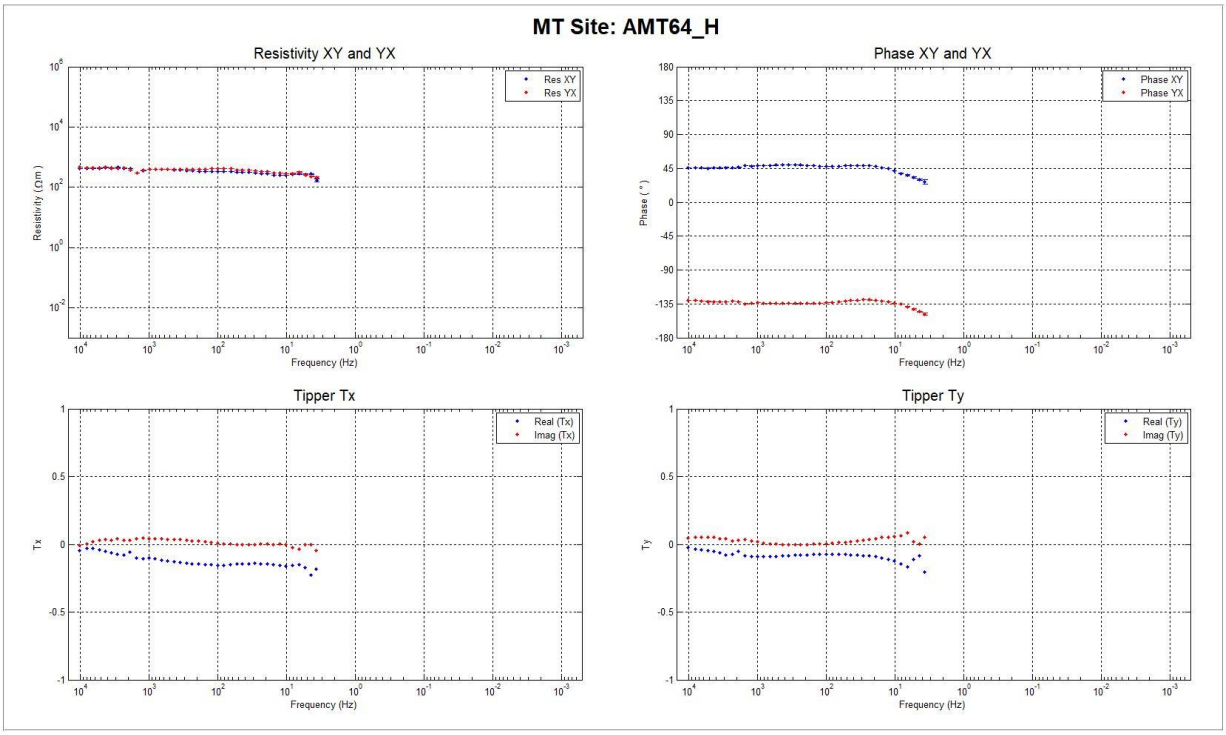
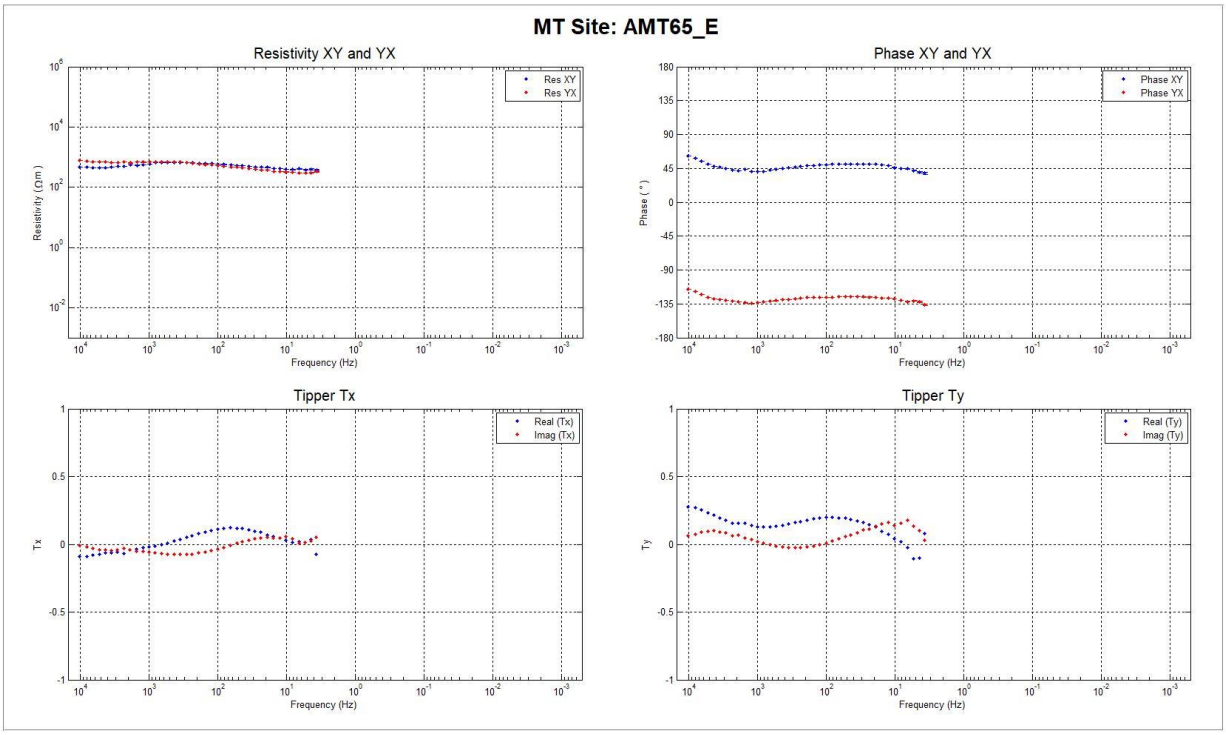
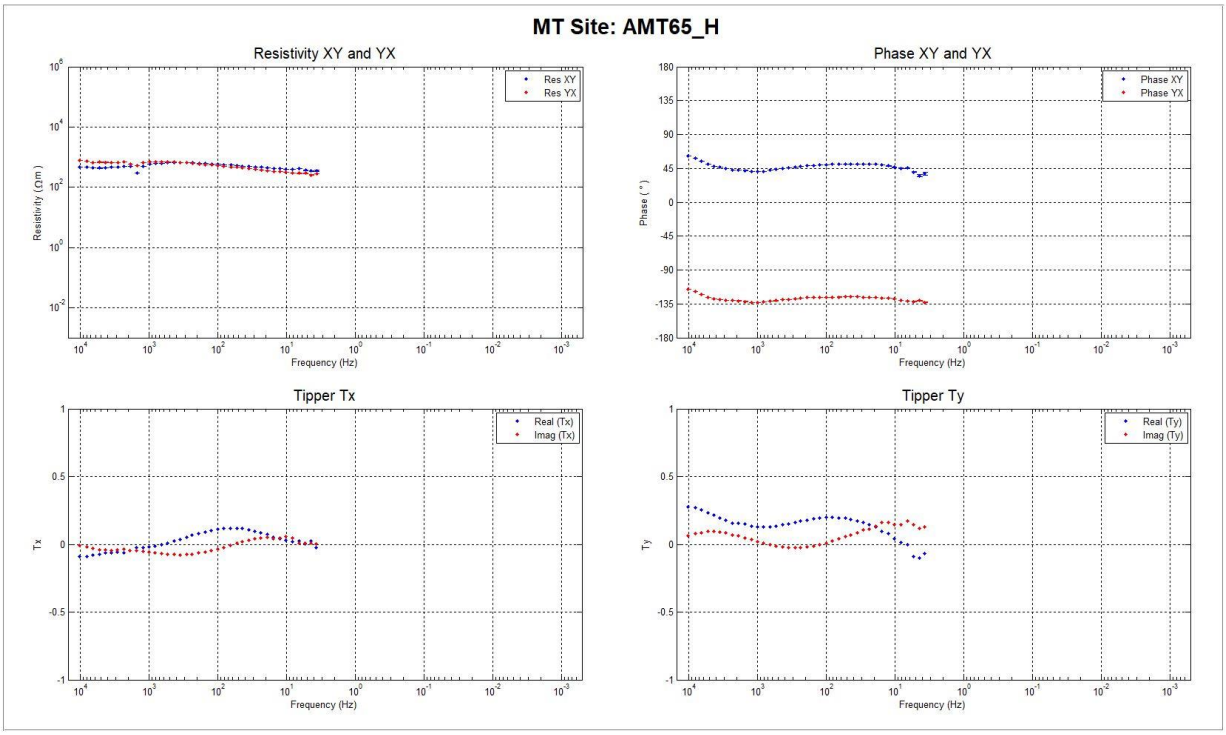
Frequency (Hz)
Tipper Ty
Real (Ty)
Imag (Ty)
Ty
Frequency (Hz)


MT Site: AMT64_H
Resistivity XY and YX
Res XY
Res YX
Resistivity (Ωm)
Frequency (Hz)
Phase XY and YX
Phase XY
Phase YX
Phase (°)
Frequency (Hz)
Tipper Tx
Real (Tx)
Imag (Tx)
Tx
Frequency (Hz)
Tipper Ty
Real (Ty)
Imag (Ty)
Ty
Frequency (Hz)


MT Site: AMT65_E
Resistivity XY and YX
Res XY
Res YX
Resistivity (Ωm)
Frequency (Hz)
Phase XY and YX
Phase XY
Phase YX
Phase (°)
Frequency (Hz)
Tipper Tx
Real (Tx)
Imag (Tx)
Tx
Frequency (Hz)
Tipper Ty
Real (Ty)
Imag (Ty)
Ty
Frequency (Hz)


MT Site: AMT65_H
Resistivity XY and YX
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Res YX
Resistivity (Ωm)
Frequency (Hz)
Phase XY and YX
Phase XY
Phase YX
Phase (°)
Frequency (Hz)
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Real (Tx)
Imag (Tx)
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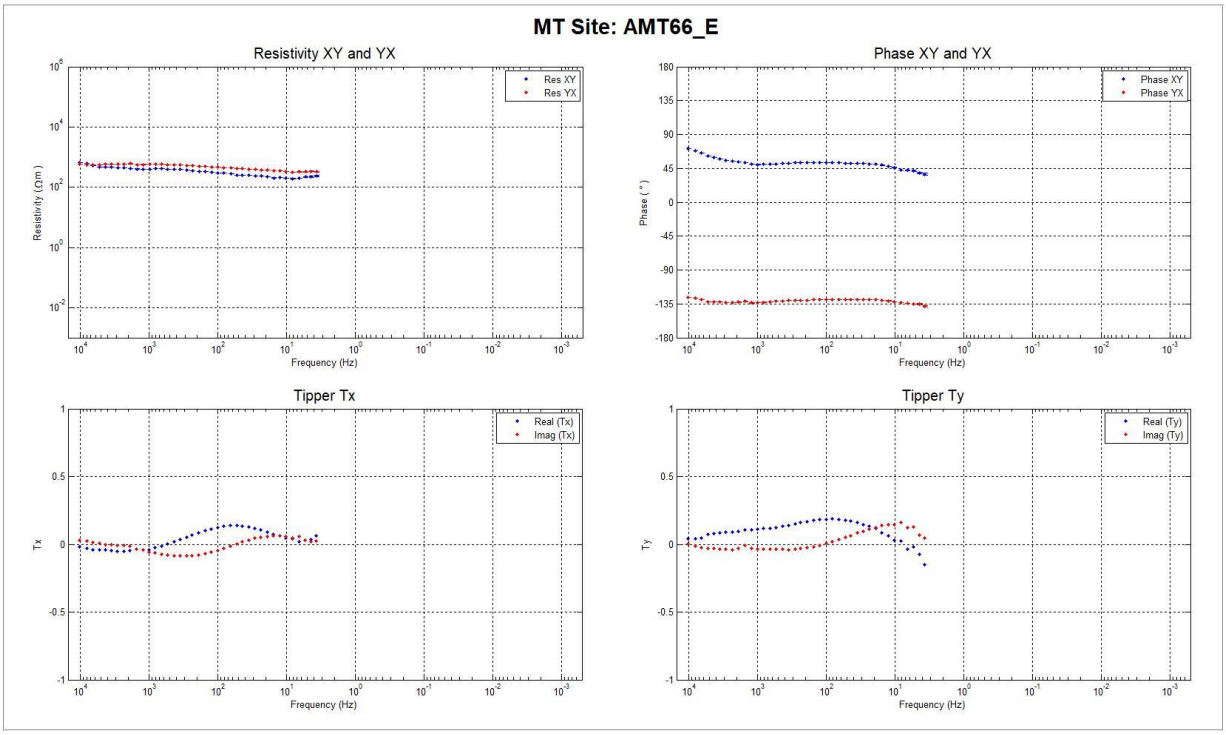
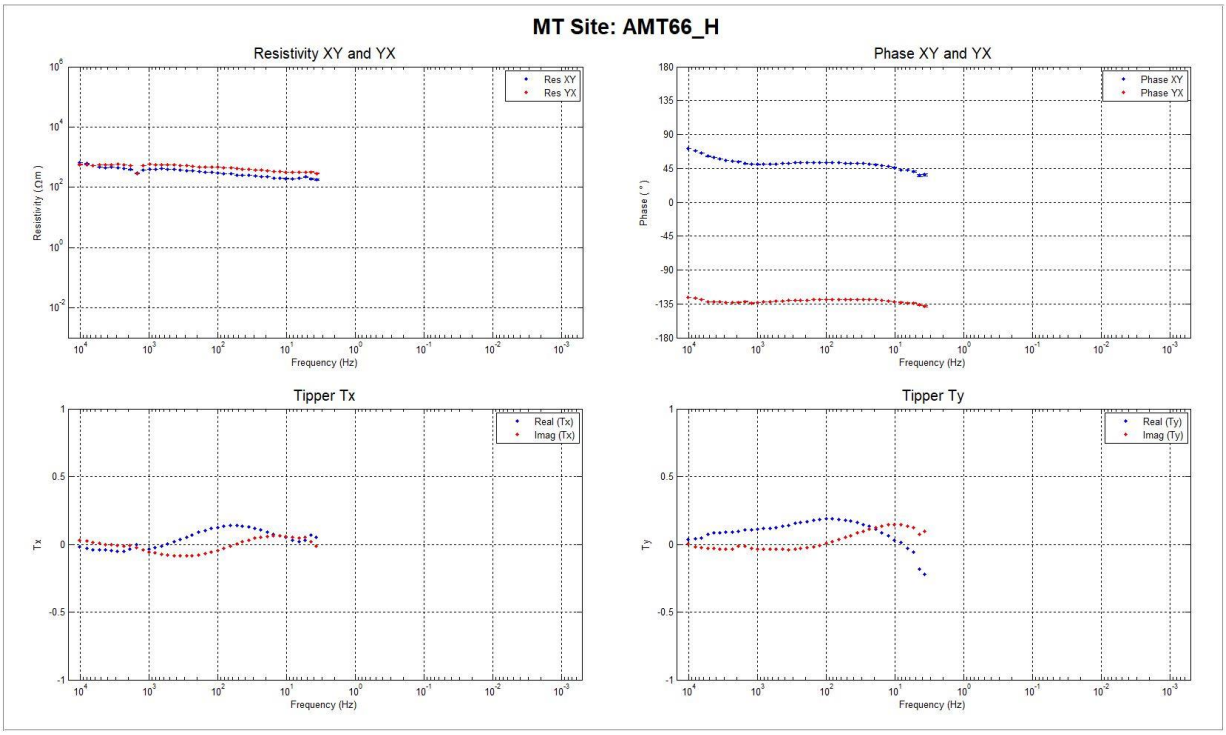
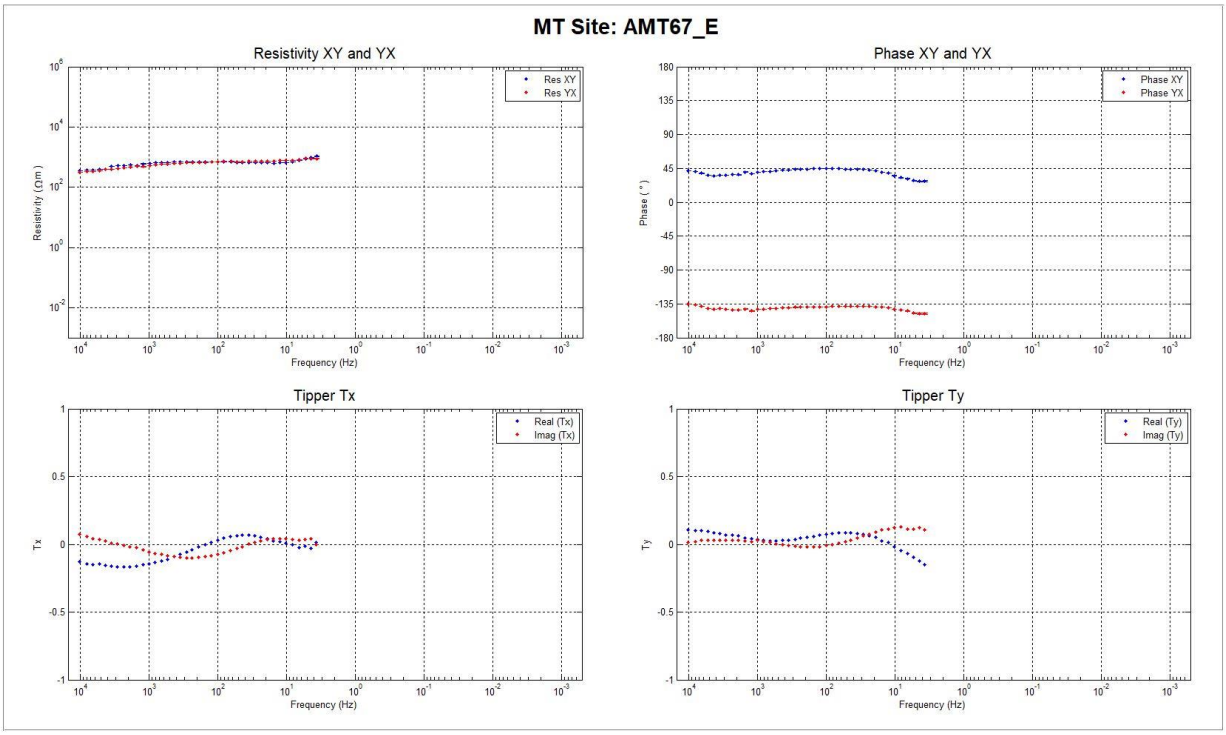
Frequency (Hz)
Tipper Ty
Real (Ty)
Imag (Ty)
Ty
Frequency (Hz)


MT Site: AMT66_E
Resistivity XY and YX
Res XY
Res YX
Resistivity (Ωm)
Frequency (Hz)
Phase XY and YX
Phase XY
Phase YX
Phase (°)
Frequency (Hz)
Tipper Tx
Real (Tx)
Imag (Tx)
Tx
Frequency (Hz)
Tipper Ty
Real (Ty)
Imag (Ty)
Ty
Frequency (Hz)


MT Site: AMT66_H
Resistivity XY and YX
Res XY
Res YX
Resistivity (Ωm)
Frequency (Hz)
Phase XY and YX
Phase XY
Phase YX
Phase (°)
Frequency (Hz)
Tipper Tx
Real (Tx)
Imag (Tx)
Tx
Frequency (Hz)
Tipper Ty
Real (Ty)
Imag (Ty)
Ty
Frequency (Hz)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Resistivity XY and YX
Res XY
Res YX
Resistivity (Ωm)
Frequency (Hz)
Phase XY and YX
Phase XY
Phase YX
Phase (°)
Frequency (Hz)
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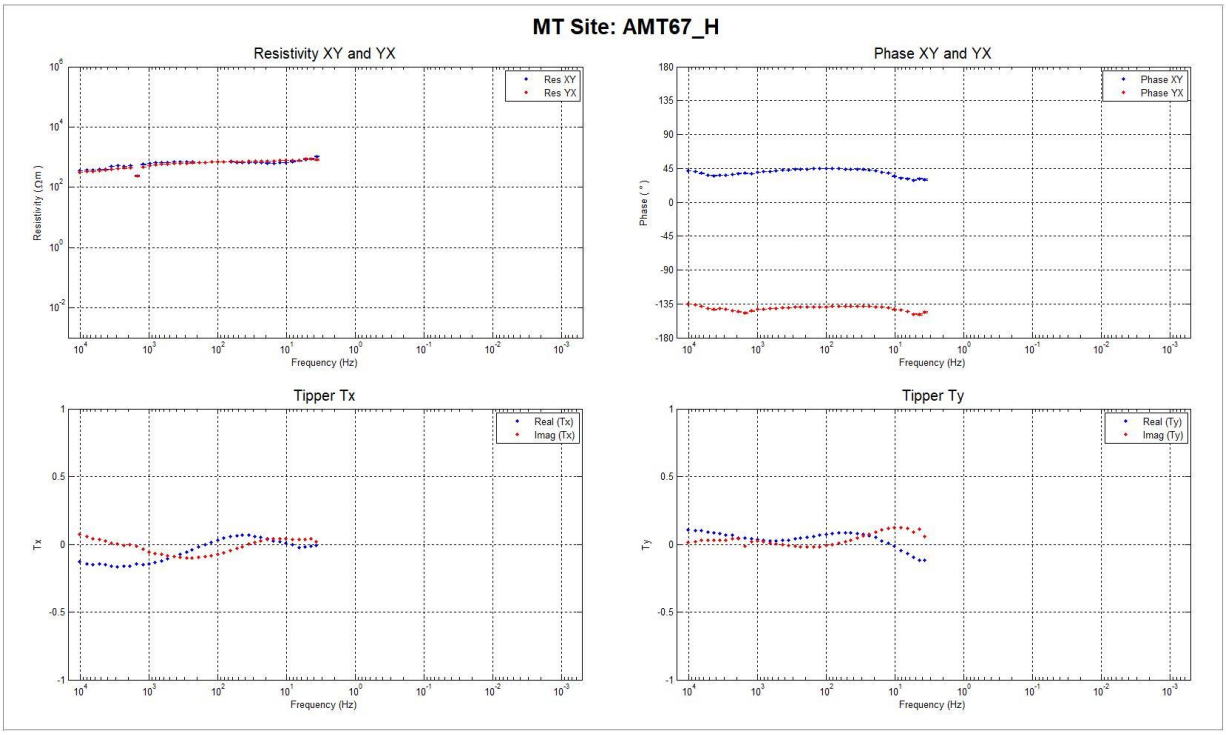
Frequency (Hz)
Tipper Ty
Real (Ty)
Imag (Ty)
Ty
Frequency (Hz)


MT Site: AMT67_H
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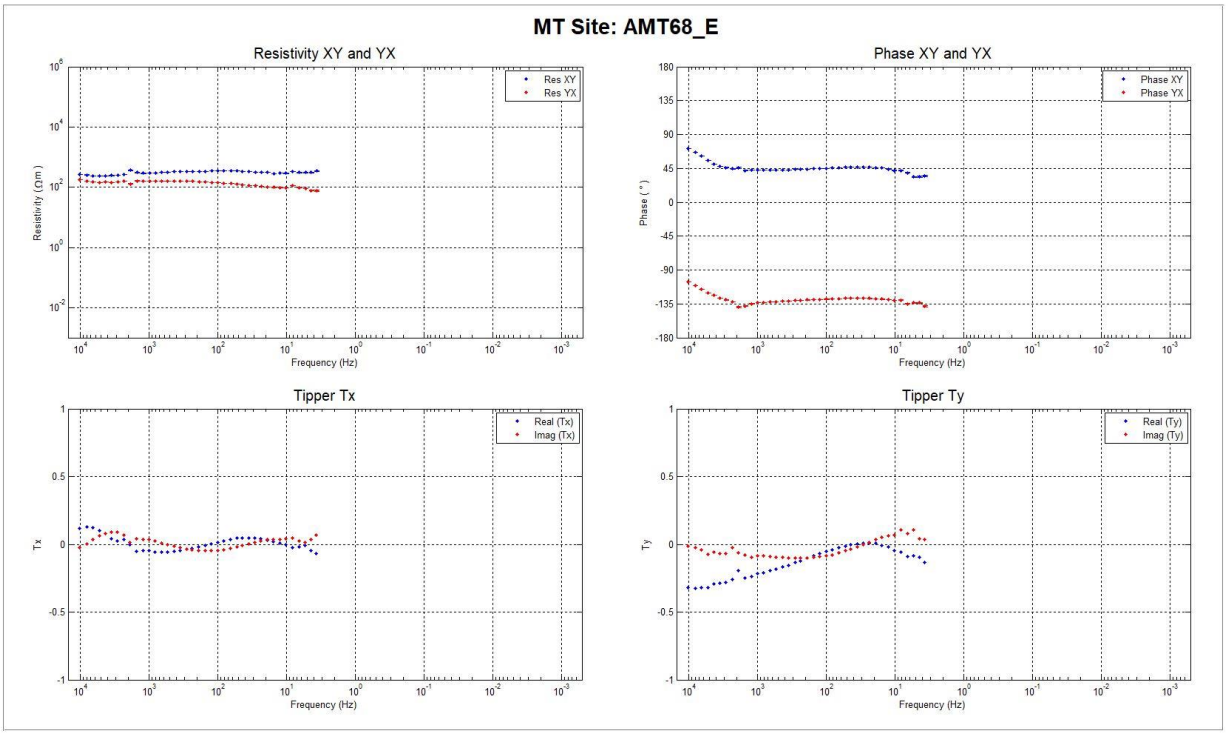
Res XY
Res YX
Resistivity (Ωm)
Frequency (Hz)
Phase XY and YX
Phase XY
Phase YX
Phase (°)
Frequency (Hz)
Tipper Tx
Real (Tx)
Imag (Tx)
Tx
Frequency (Hz)
Tipper Ty
Real (Ty)
Imag (Ty)
Ty
Frequency (Hz)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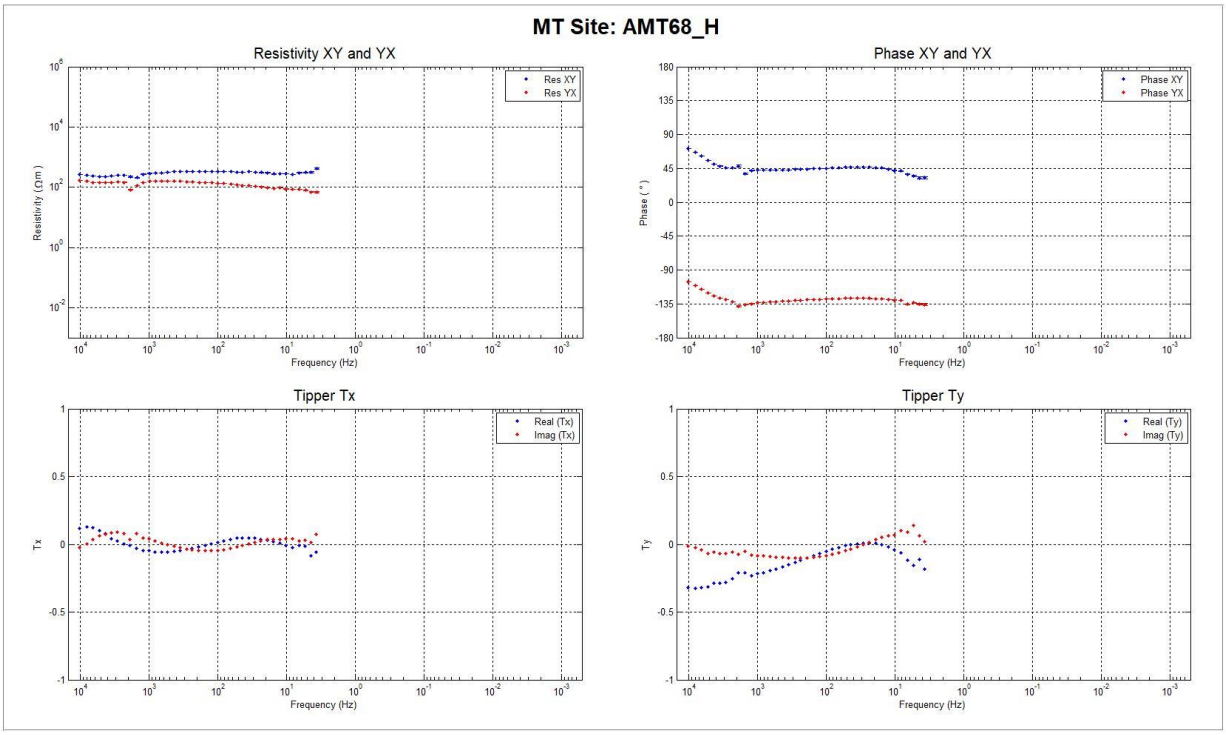
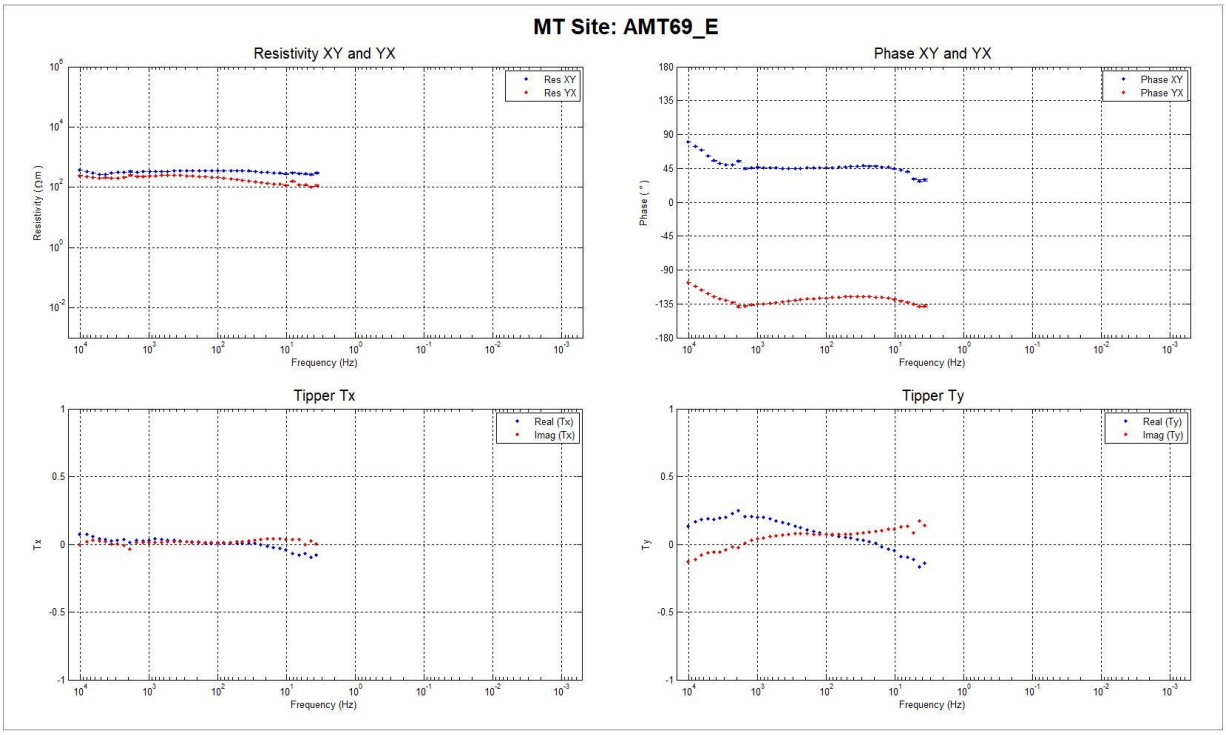
Res YX
Resistivity (Ωm)
Frequency (Hz)
Phase XY and YX
Phase XY
Phase YX
Phase (°)
Frequency (Hz)
Tipper Tx
Real (Tx)
Imag (Tx)
Tx
Frequency (Hz)
Tipper Ty
Real (Ty)
Imag (Ty)
Ty
Frequency (Hz)


MT Site: AMT68_H
Resistivity XY and YX
Res XY
Res YX
Resistivity (Ωm)
Frequency (Hz)
Phase XY and YX
Phase XY
Phase YX
Phase (°)
Frequency (Hz)
Tipper Tx
Real (Tx)
Imag (Tx)
Tx
Frequency (Hz)
Tipper Ty
Real (Ty)
Imag (Ty)
Ty
Frequency (Hz)


MT Site: AMT69_E
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Res XY
Res YX
Resistivity (Ωm)
Frequency (Hz)
Phase XY and YX
Phase XY
Phase YX
Phase (°)
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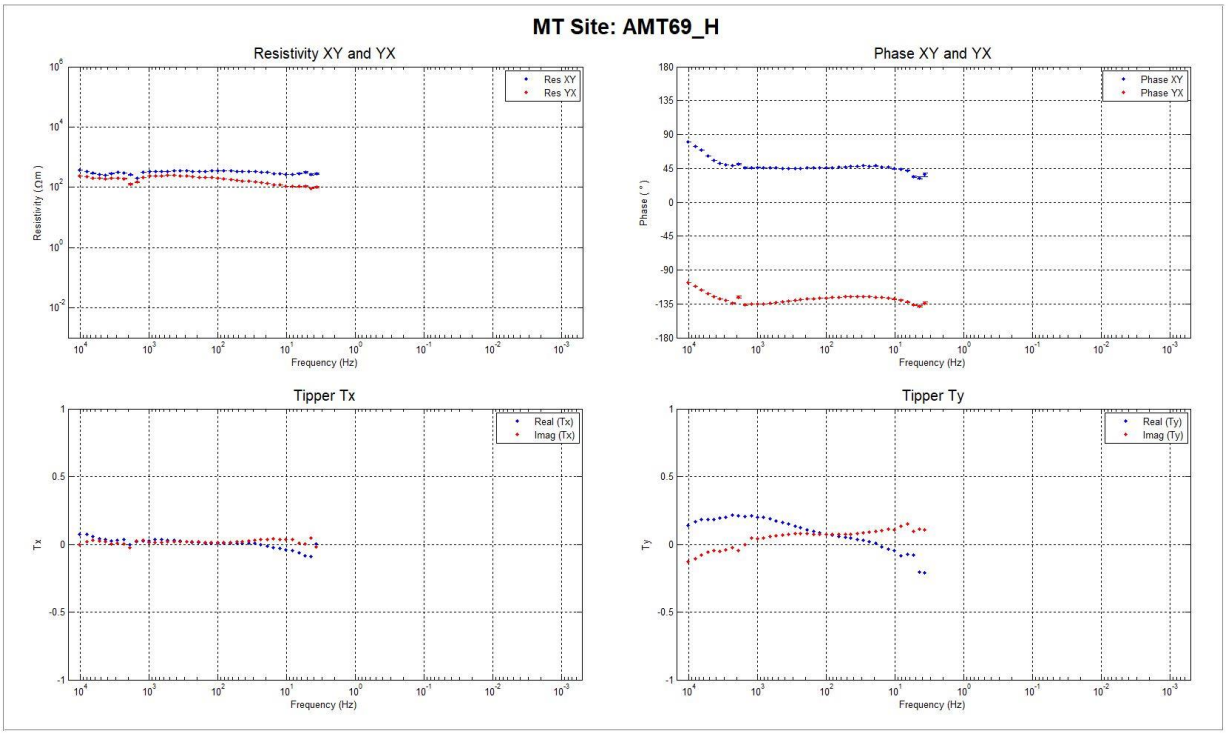
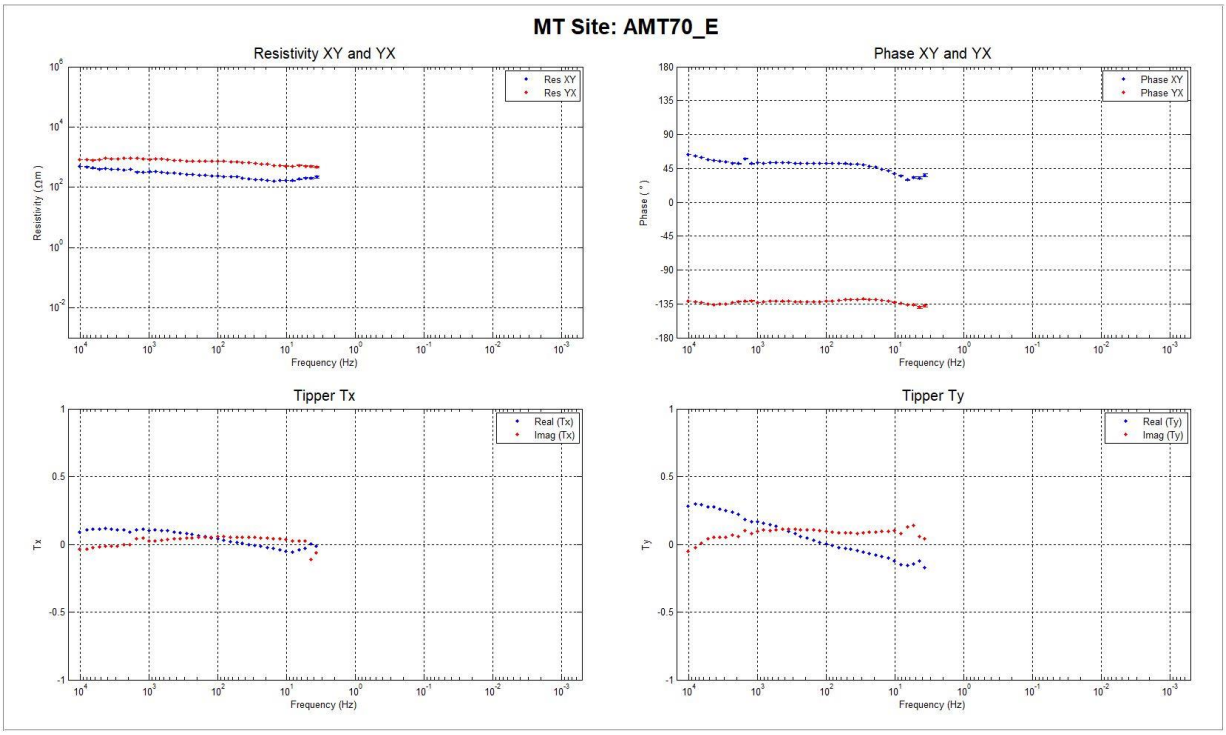
Tipper Ty
Real (Ty)
Imag (Ty)
Ty
Frequency (Hz)


MT Site: AMT69_H
Resistivity XY and YX
Res XY
Res YX
Resistivity (Ωm)
Frequency (Hz)
Phase XY and YX
Phase XY
Phase YX
Phase (°)
Frequency (Hz)
Tipper Tx
Real (Tx)
Imag (Tx)
Tx
Frequency (Hz)
Tipper Ty
Real (Ty)
Imag (Ty)
Ty
Frequency (Hz)


MT Site: AMT70_E
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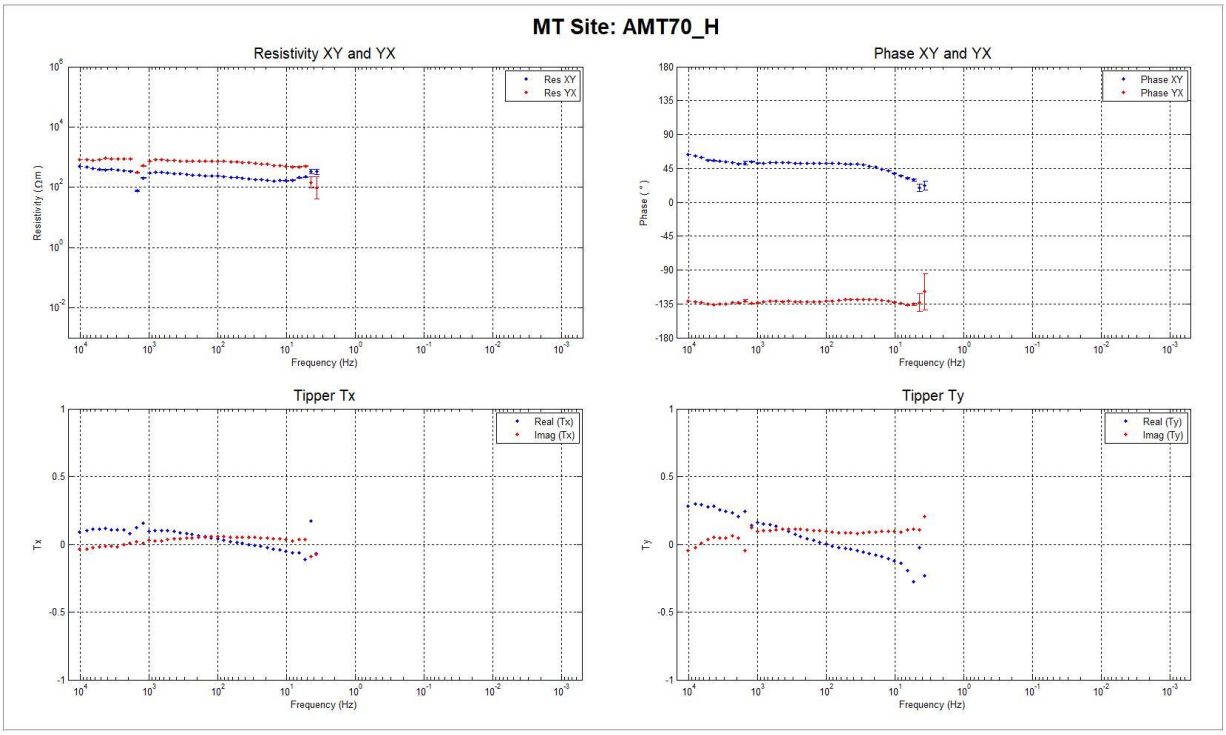
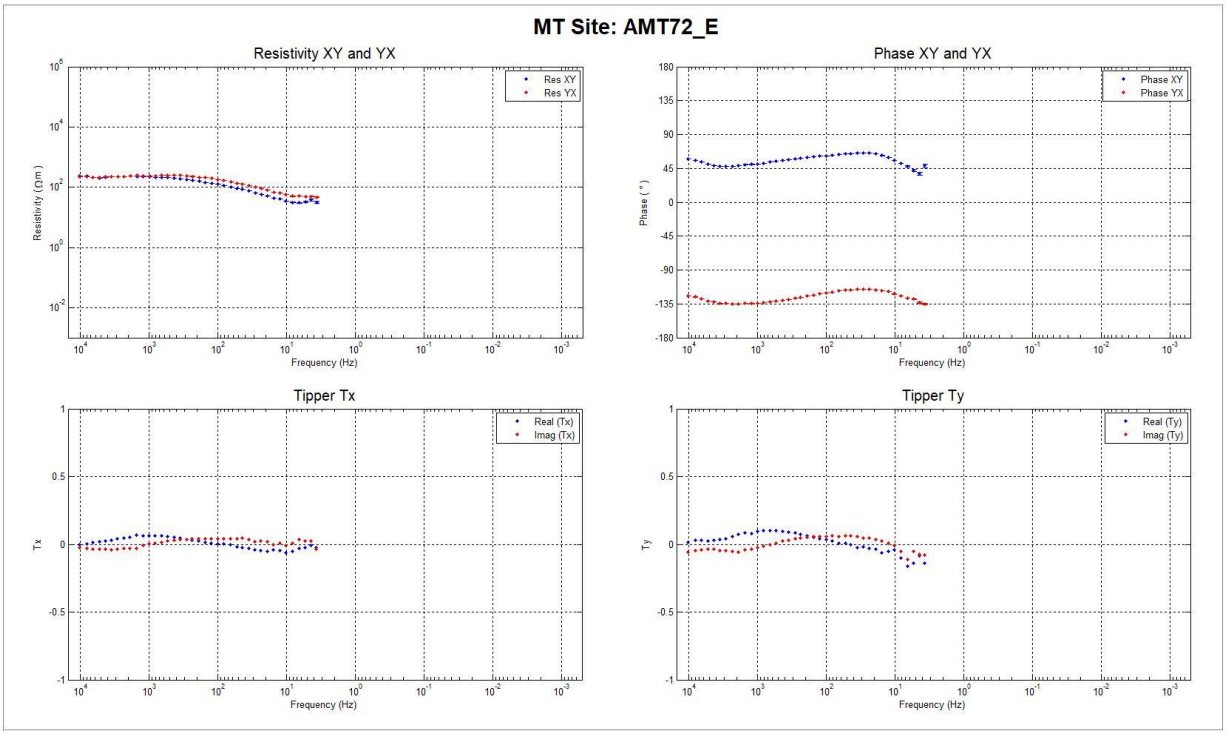
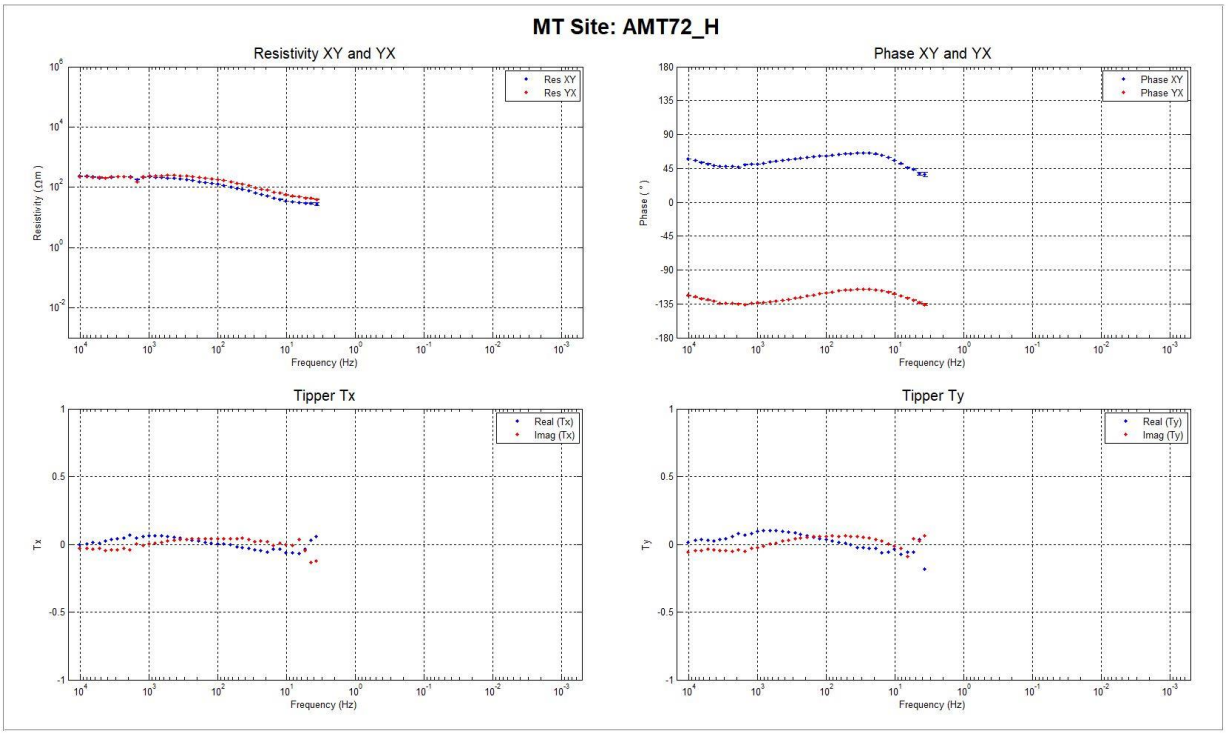
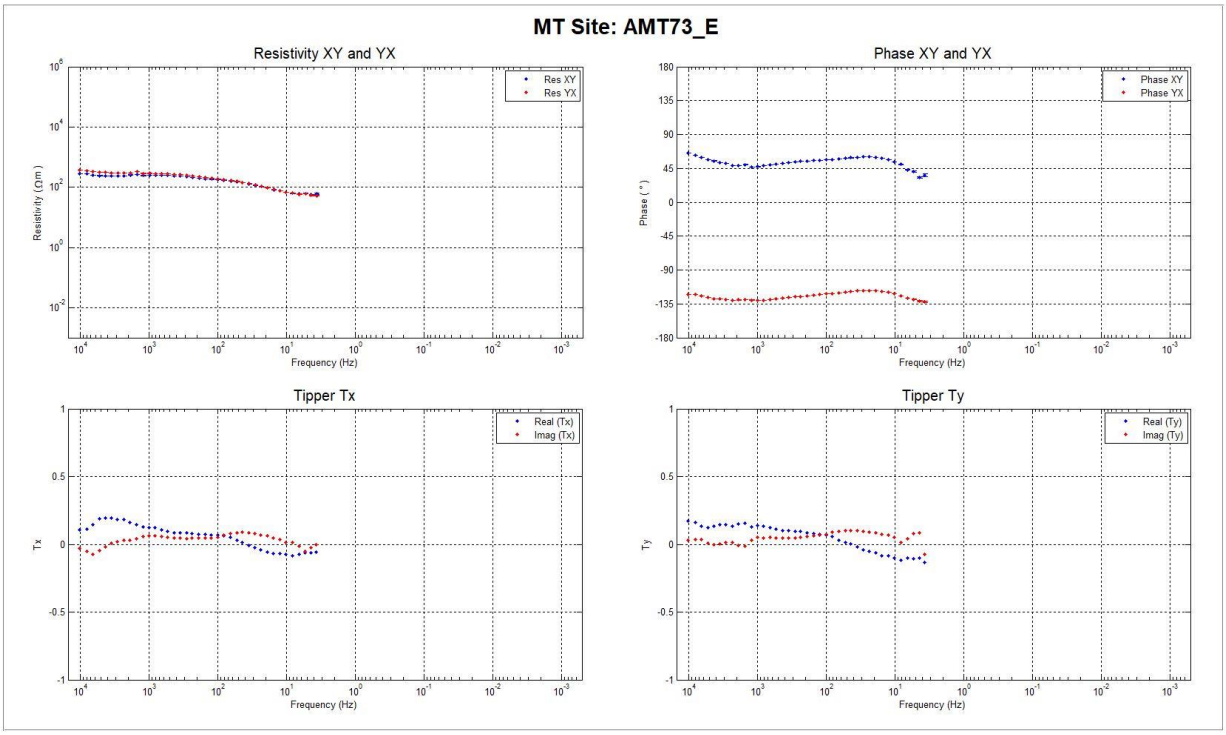
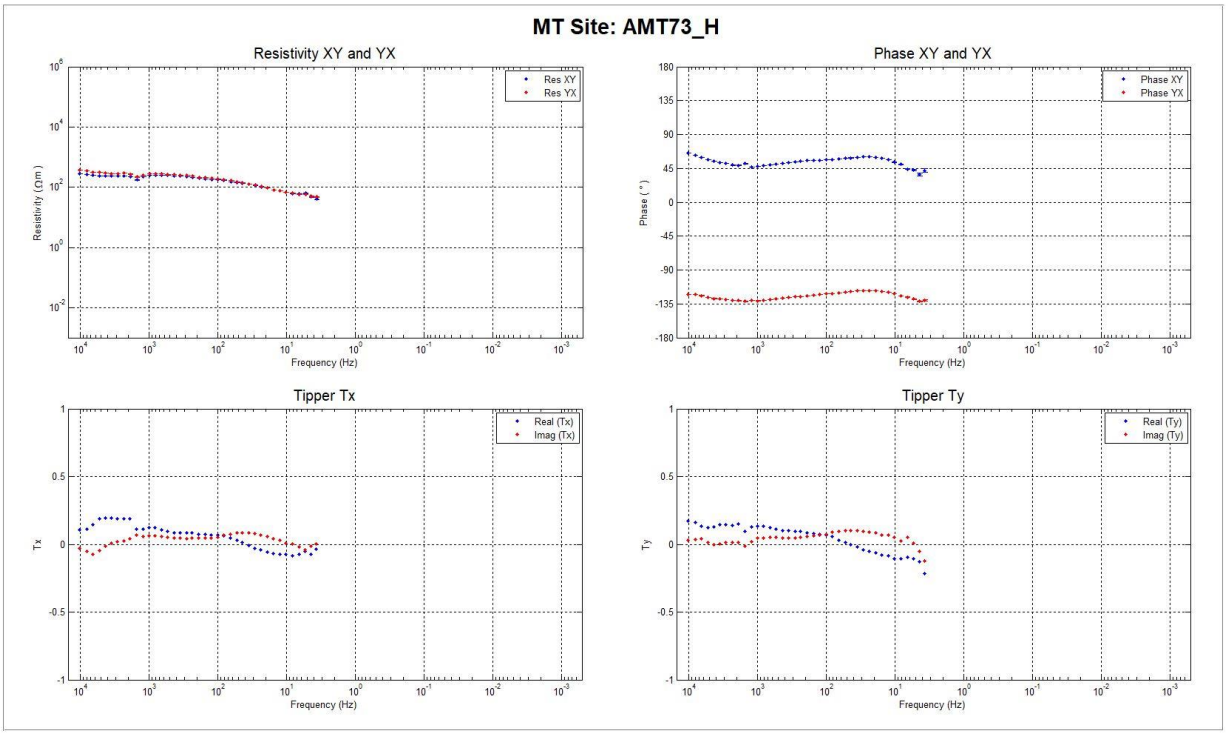
Res XY
Res YX
Resistivity (Ωm)
Frequency (Hz)
Phase XY and YX
Phase XY
Phase YX
Phase (°)
Frequency (Hz)
Tipper Tx
Real (Tx)
Imag (Tx)
Tx
Frequency (Hz)
Tipper Ty
Real (Ty)
Imag (Ty)
Ty
Frequency (Hz)


MT Site: AMT70_H
Resistivity XY and YX
Res XY
Res YX
Resistivity (Ωm)
Frequency (Hz)
Phase XY and YX
Phase XY
Phase YX
Phase (°)
Frequency (Hz)
Tipper Tx
Real (Tx)
Imag (Tx)
Tx
Frequency (Hz)
Tipper Ty
Real (Ty)
Imag (Ty)
Ty
Frequency (Hz)

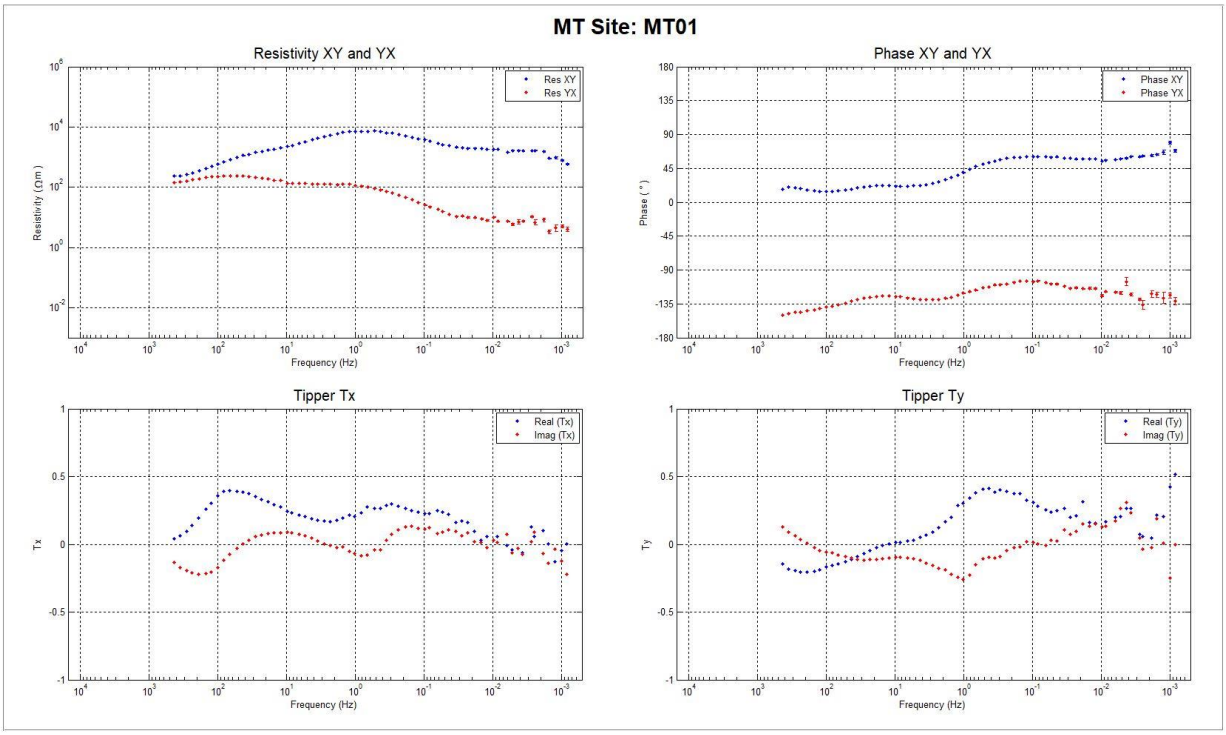

MT Site: AMT72_E
Resistivity XY and YX
Res XY
Res YX
Resistivity (Ωm)
Frequency (Hz)
Phase XY and YX
Phase XY
Phase YX
Phase (°)
Frequency (Hz)
Tipper Tx
Real (Tx)
Imag (Tx)
Tx
Frequency (Hz)
Tipper Ty
Real (Ty)
Imag (Ty)
Ty
Frequency (Hz)


MT Site: AMT72_H
Resistivity XY and YX
Res XY
Res YX
Resistivity (Ωm)
Frequency (Hz)
Phase XY and YX
Phase XY
Phase YX
Phase (°)
Frequency (Hz)
Tipper Tx
Real (Tx)
Imag (Tx)
Tx
Frequency (Hz)
Tipper Ty
Real (Ty)
Imag (Ty)
Ty
Frequency (Hz)


MT Site: AMT73_E
Resistivity XY and YX
Res XY
Res YX
Resistivity (Ωm)
Frequency (Hz)
Phase XY and YX
Phase XY
Phase YX
Phase (°)
Frequency (Hz)
Tipper Tx
Real (Tx)
Imag (Tx)
Tx
Frequency (Hz)
Tipper Ty
Real (Ty)
Imag (Ty)
Ty
Frequency (Hz)


MT Site: AMT73_H
Resistivity XY and YX
Res XY
Res YX
Resistivity (Ωm)
Frequency (Hz)
Phase XY and YX
Phase XY
Phase YX
Phase (°)
Frequency (Hz)
Tipper Tx
Real (Tx)
Imag (Tx)
Tx
Frequency (Hz)
Tipper Ty
Real (Ty)
Imag (Ty)
Ty
Frequency (Hz)

D.2. MT SITES


MT Site: MT01
Resistivity XY and YX
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Res YX
Resistivity (Ωm)
Frequency (Hz)
Phase XY and YX
Phase XY
Phase YX
Phase (°)
Frequency (Hz)
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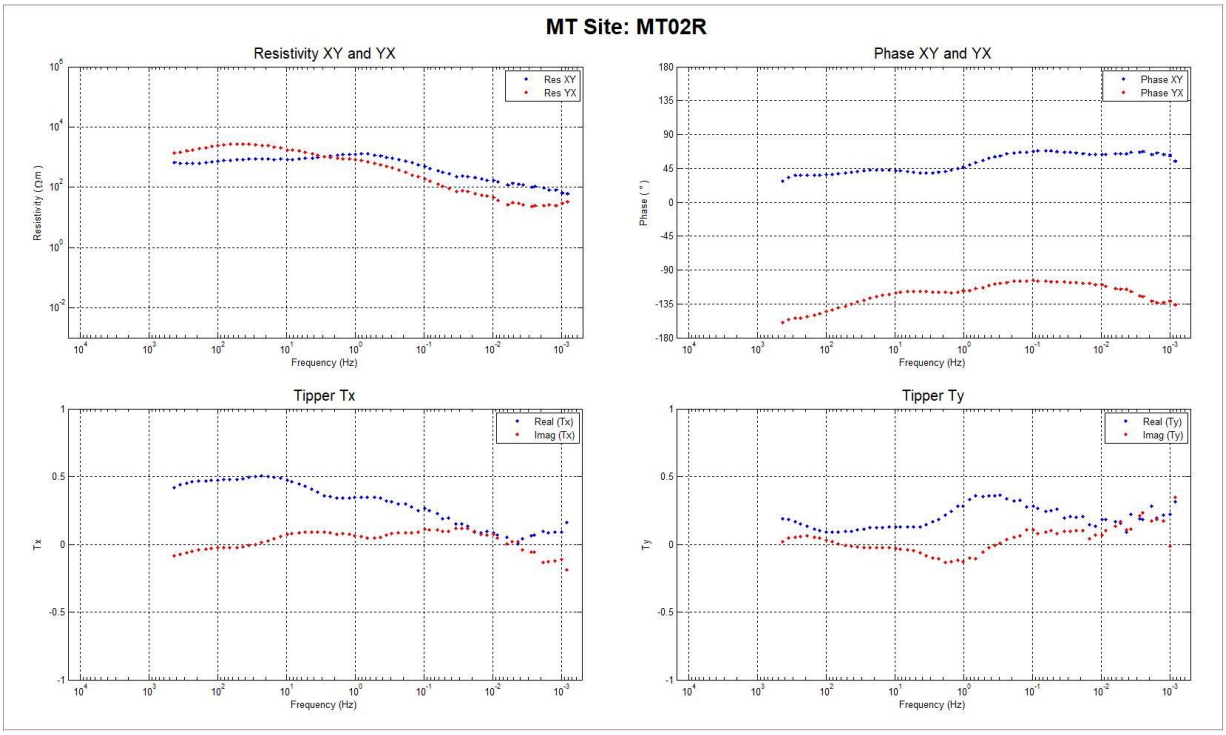
Real (Tx)
Imag (Tx)
Tx
Frequency (Hz)
Tipper Ty
Real (Ty)
Imag (Ty)
Ty
Frequency (Hz)


MT Site: MT02R
Resistivity XY and YX
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Res YX
Resistivity (Ωm)
Frequency (Hz)
Phase XY and YX
Phase XY
Phase YX
Phase (°)
Frequency (Hz)
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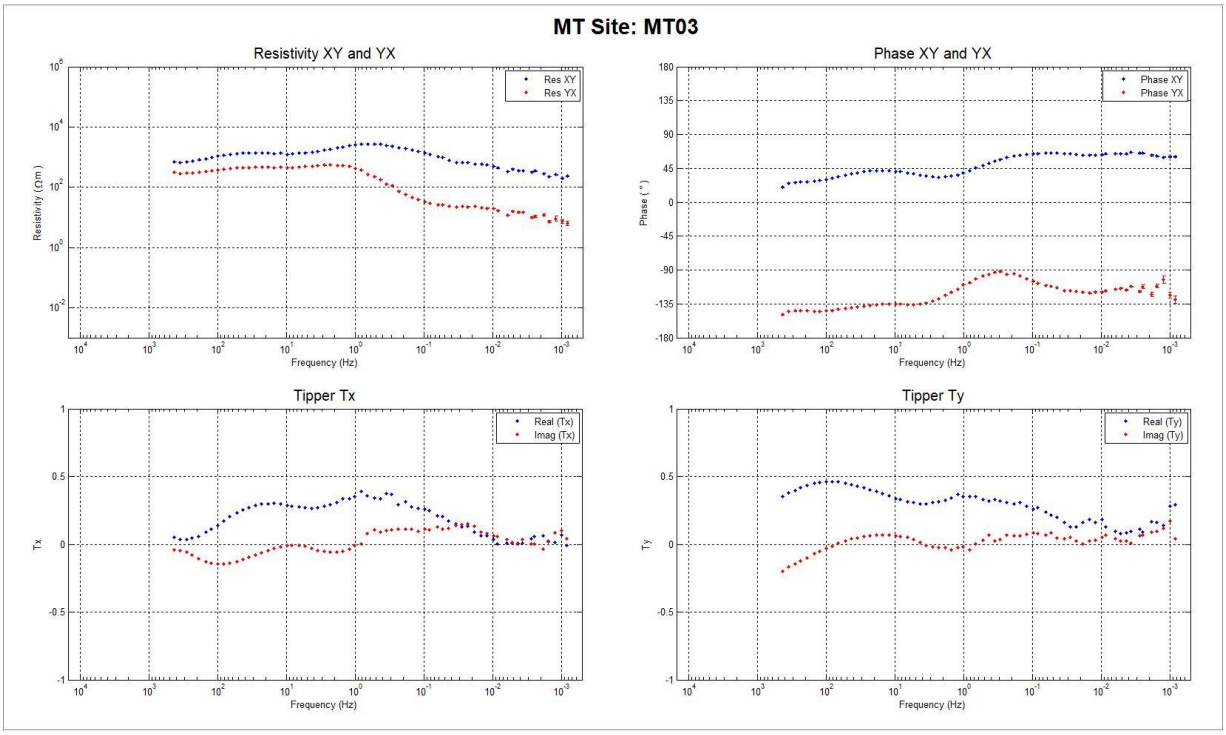
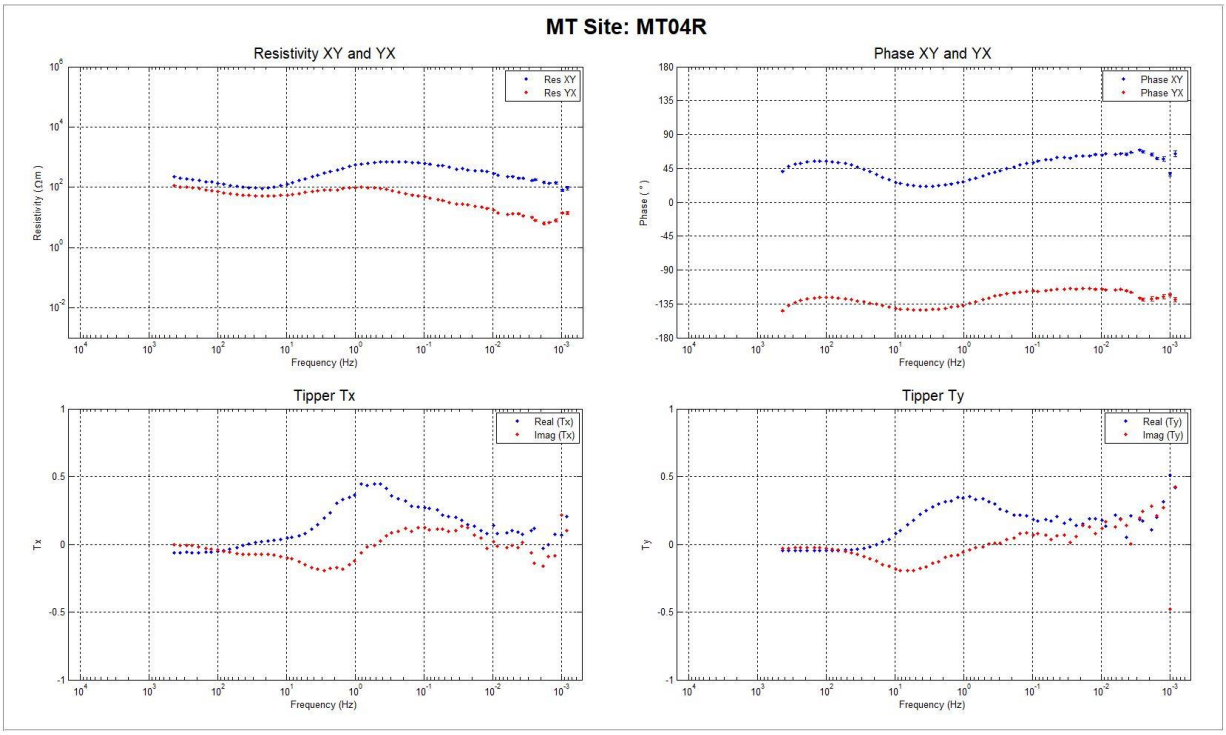
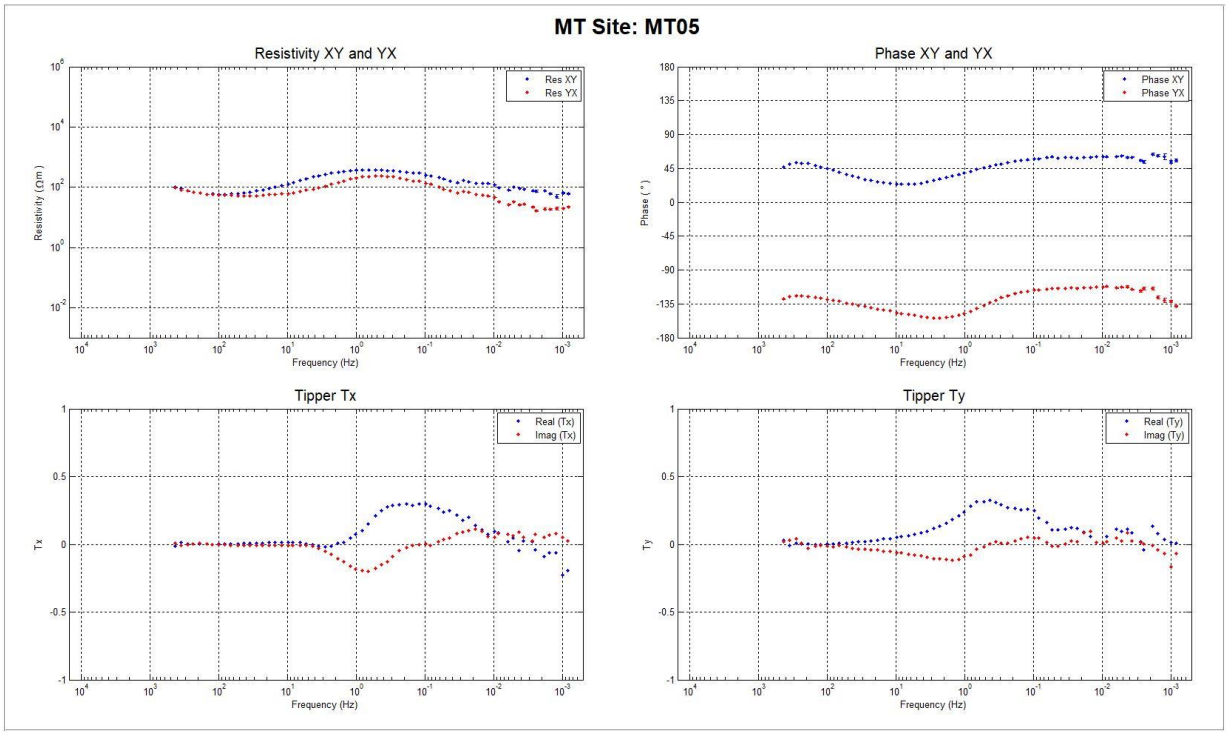
Imag (Tx)
Tx
Frequency (Hz)
Tipper Ty
Real (Ty)
Imag (Ty)
Ty
Frequency (Hz)


MT Site: MT03
Resistivity XY and YX
Res XY
Res YX
Resistivity (Ωm)
Frequency (Hz)
Phase XY and YX
Phase XY
Phase YX
Phase (°)
Frequency (Hz)
Tipper Tx
Real (Tx)
Imag (Tx)
Tx
Frequency (Hz)
Tipper Ty
Real (Ty)
Imag (Ty)
Ty
Frequency (Hz)


MT Site: MT04R
Resistivity XY and YX
Res XY
Res YX
Resistivity (Ωm)
Frequency (Hz)
Phase XY and YX
Phase XY
Phase YX
Phase (°)
Frequency (Hz)
Tipper Tx
Real (Tx)
Imag (Tx)
Tx
Frequency (Hz)
Tipper Ty
Real (Ty)
Imag (Ty)
Ty
Frequency (Hz)


MT Site: MT05
Resistivity XY and YX
Res XY
Res YX
Resistivity (Ωm)
Frequency (Hz)
Phase XY and YX
Phase XY
Phase YX
Phase (°)
Frequency (Hz)
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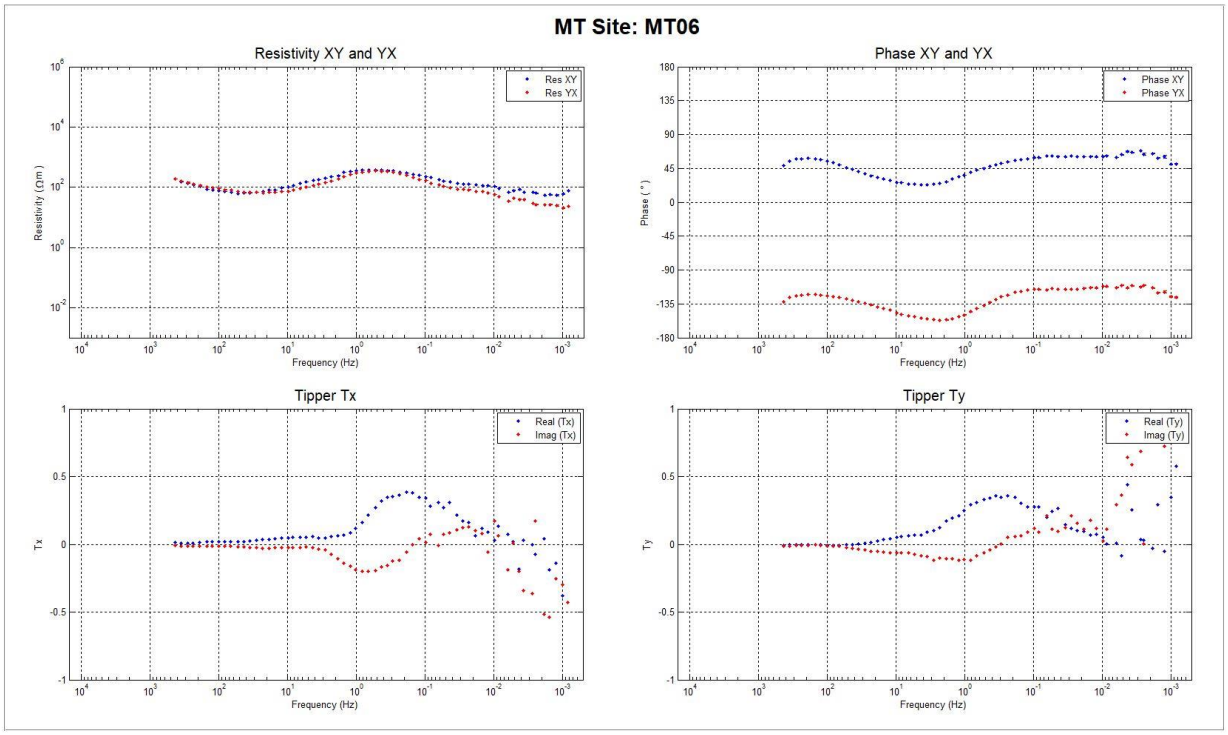
Real (Tx)
Imag (Tx)
Tx
Frequency (Hz)
Tipper Ty
Real (Ty)
Imag (Ty)
Ty
Frequency (Hz)


MT Site: MT06
Resistivity XY and YX
Res XY
Res YX
Resistivity (Ωm)
Frequency (Hz)
Phase XY and YX
Phase XY
Phase YX
Phase (°)
Frequency (Hz)
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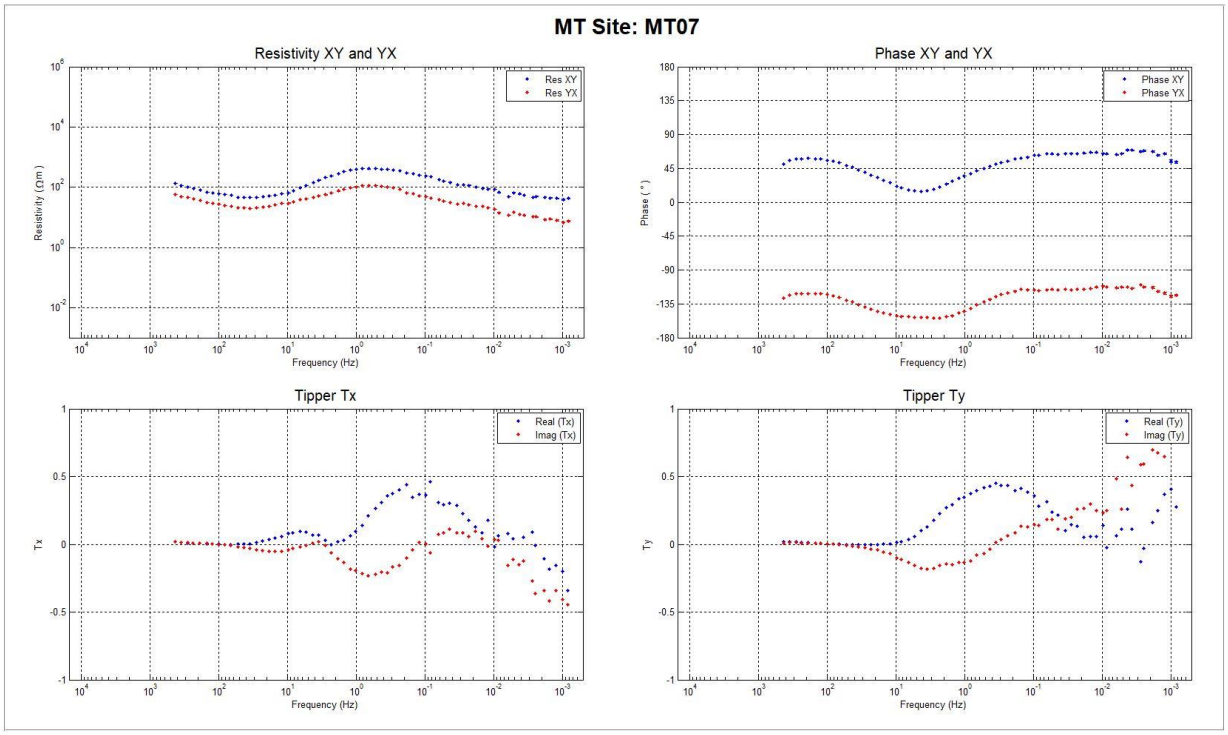
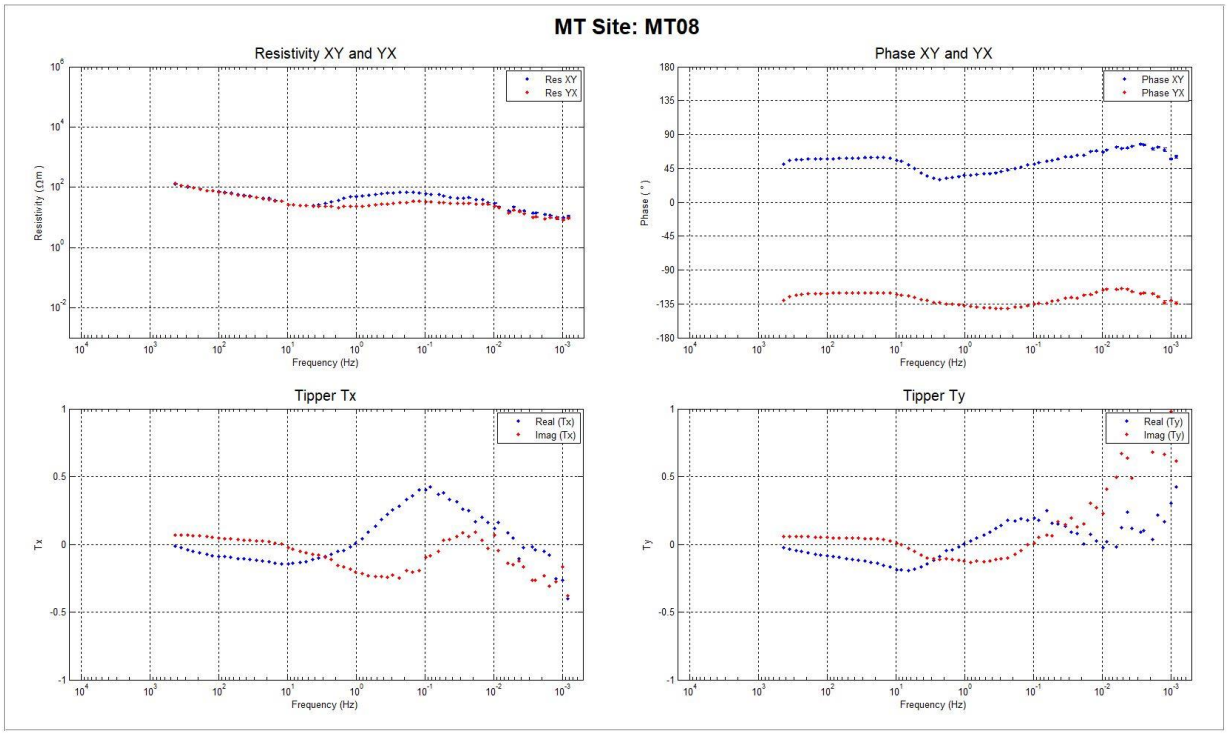
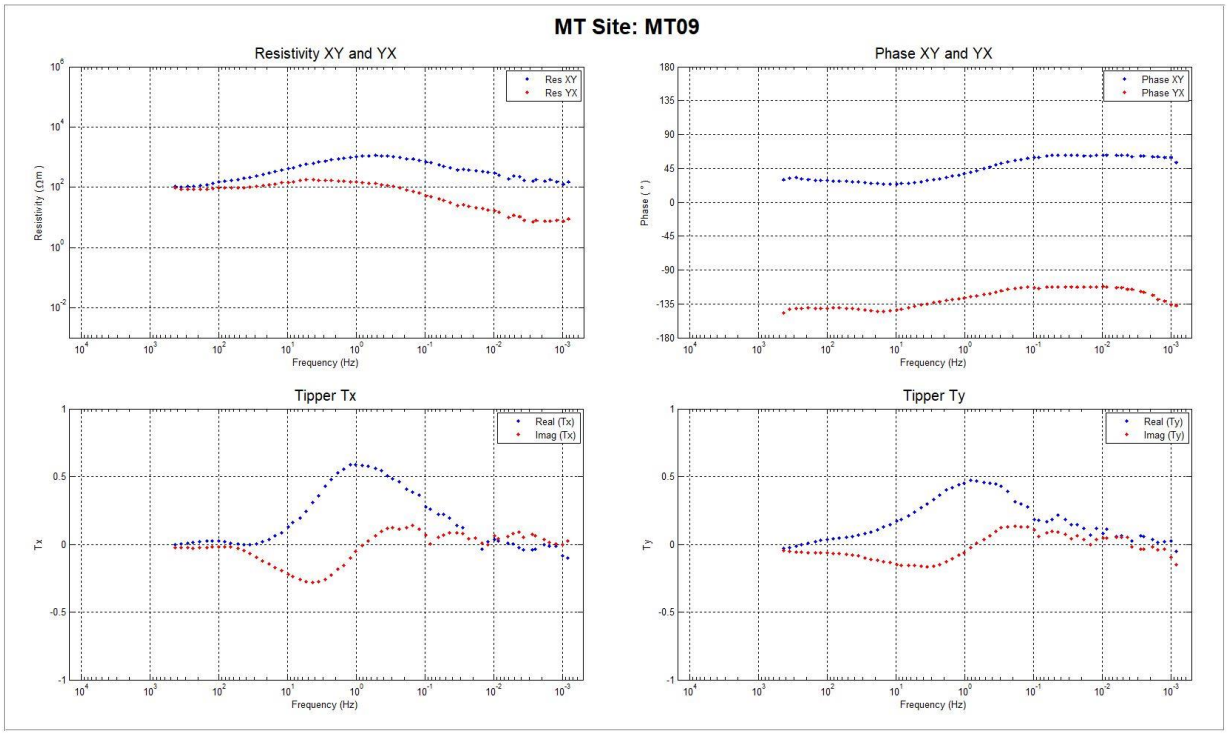
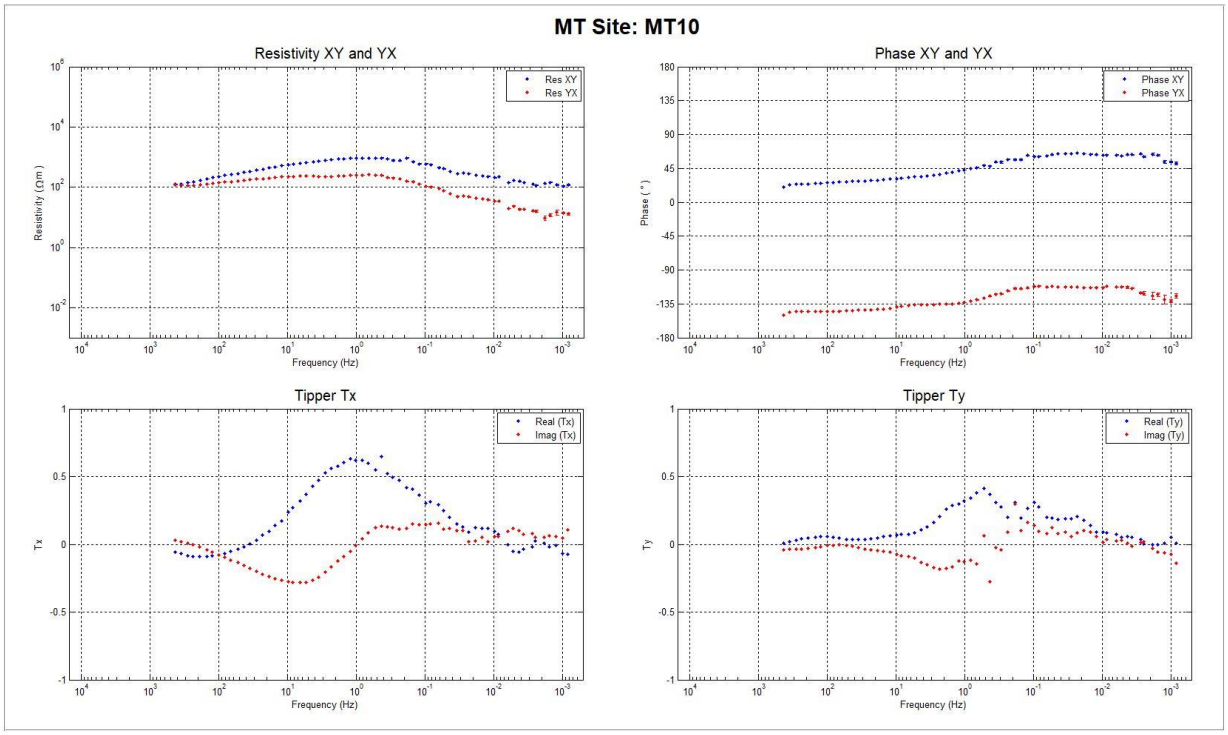
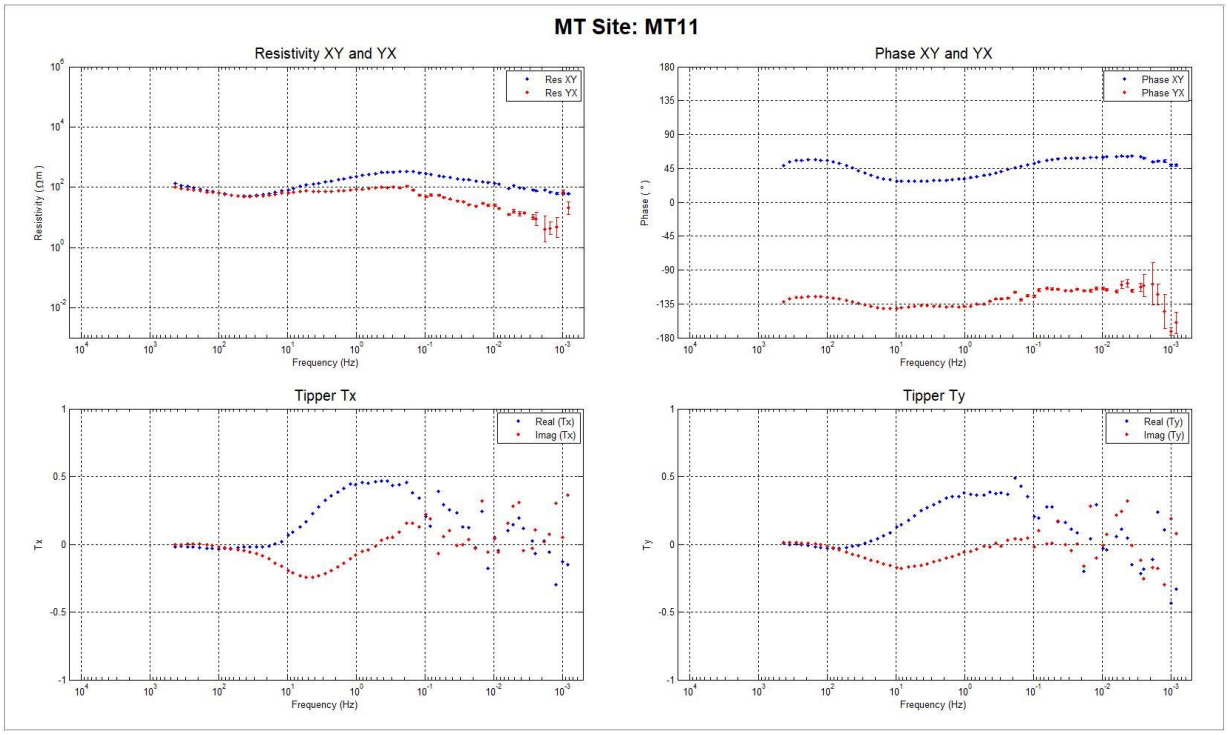
Real (Tx)
Imag (Tx)
Tx
Frequency (Hz)
Tipper Ty
Real (Ty)
Imag (Ty)
Ty
Frequency (Hz)

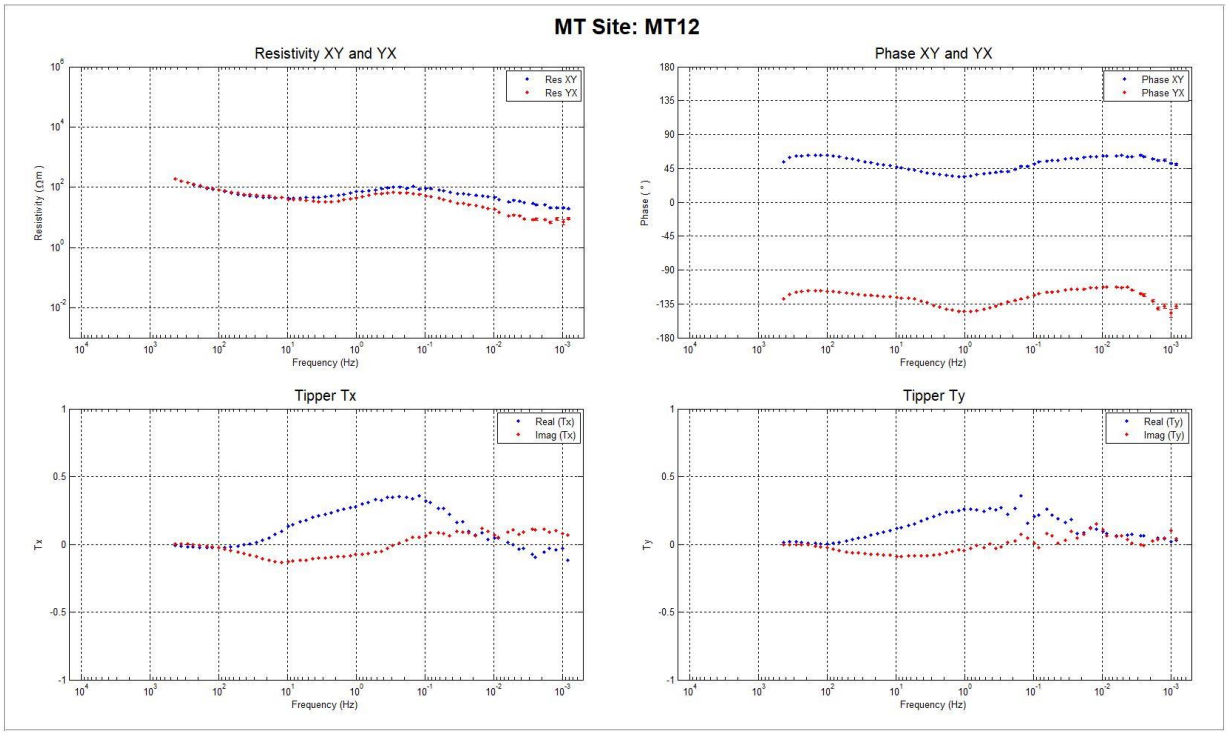

MT Site: MT07
Resistivity XY and YX
Res XY
Res YX
Resistivity (Ωm)
Frequency (Hz)
Phase XY and YX
Phase XY
Phase YX
Phase (°)
Frequency (Hz)
Tipper Tx
Real (Tx)
Imag (Tx)
Tx
Frequency (Hz)
Tipper Ty
Real (Ty)
Imag (Ty)
Ty
Frequency (Hz)

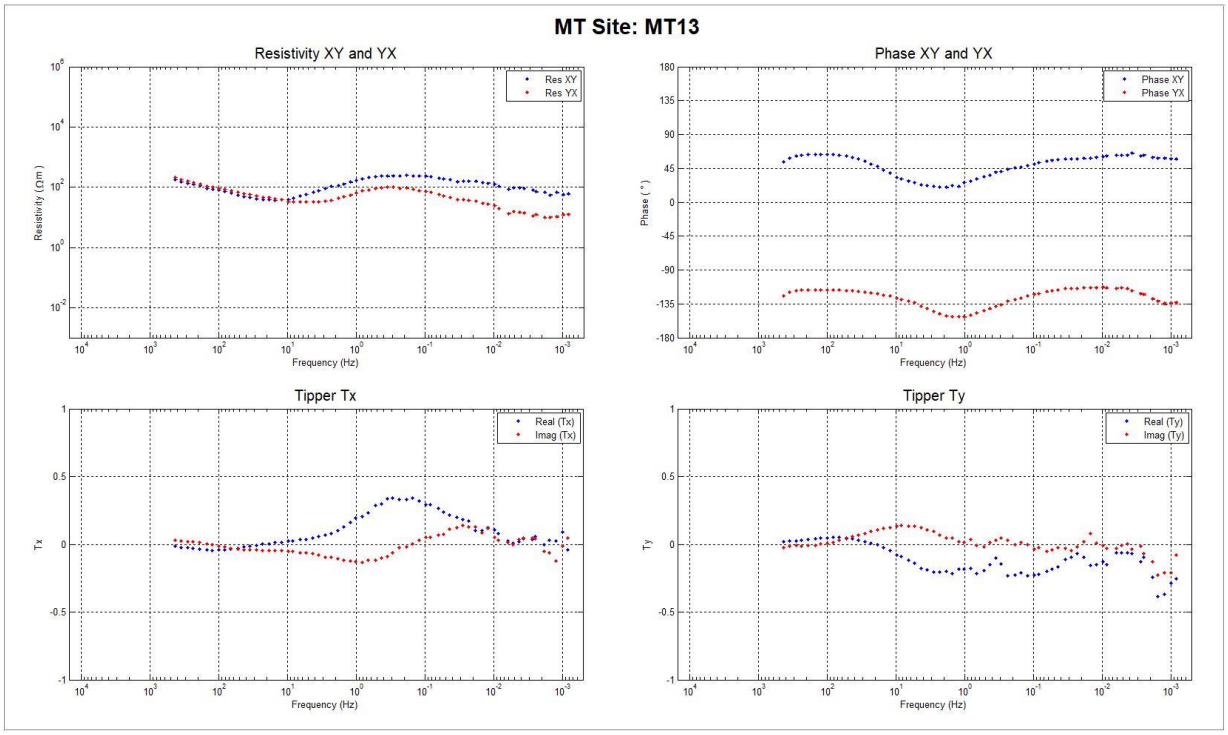

MT Site: MT08
Resistivity XY and YX
Res XY
Res YX
Resistivity (Ωm)
Frequency (Hz)
Phase XY and YX
Phase XY
Phase YX
Phase (°)
Frequency (Hz)
Tipper Tx
Real (Tx)
Imag (Tx)
Tx
Frequency (Hz)
Tipper Ty
Real (Ty)
Imag (Ty)
Ty
Frequency (Hz)

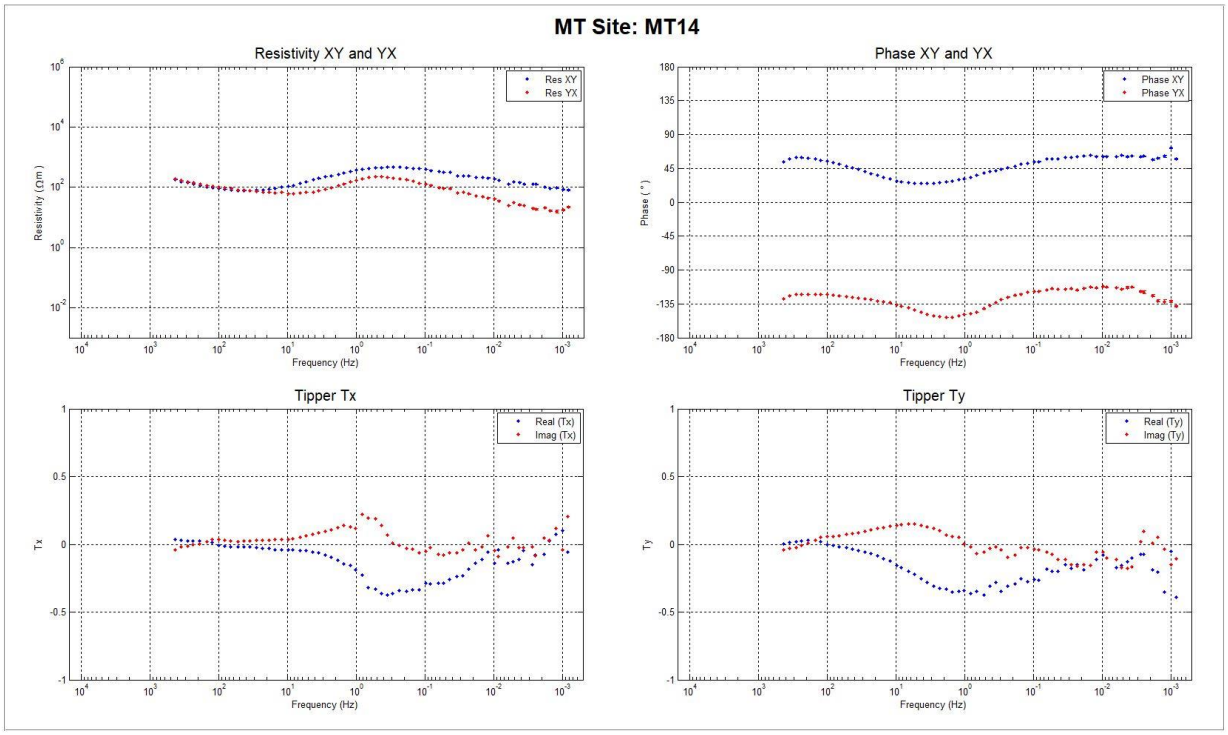

MT Site: MT09
Resistivity XY and YX
Res XY
Res YX
Resistivity (Ωm)
Frequency (Hz)
Phase XY and YX
Phase XY
Phase YX
Phase (°)
Frequency (Hz)
Tipper Tx
Real (Tx)
Imag (Tx)
Tx
Frequency (Hz)
Tipper Ty
Real (Ty)
Imag (Ty)
Ty
Frequency (Hz)

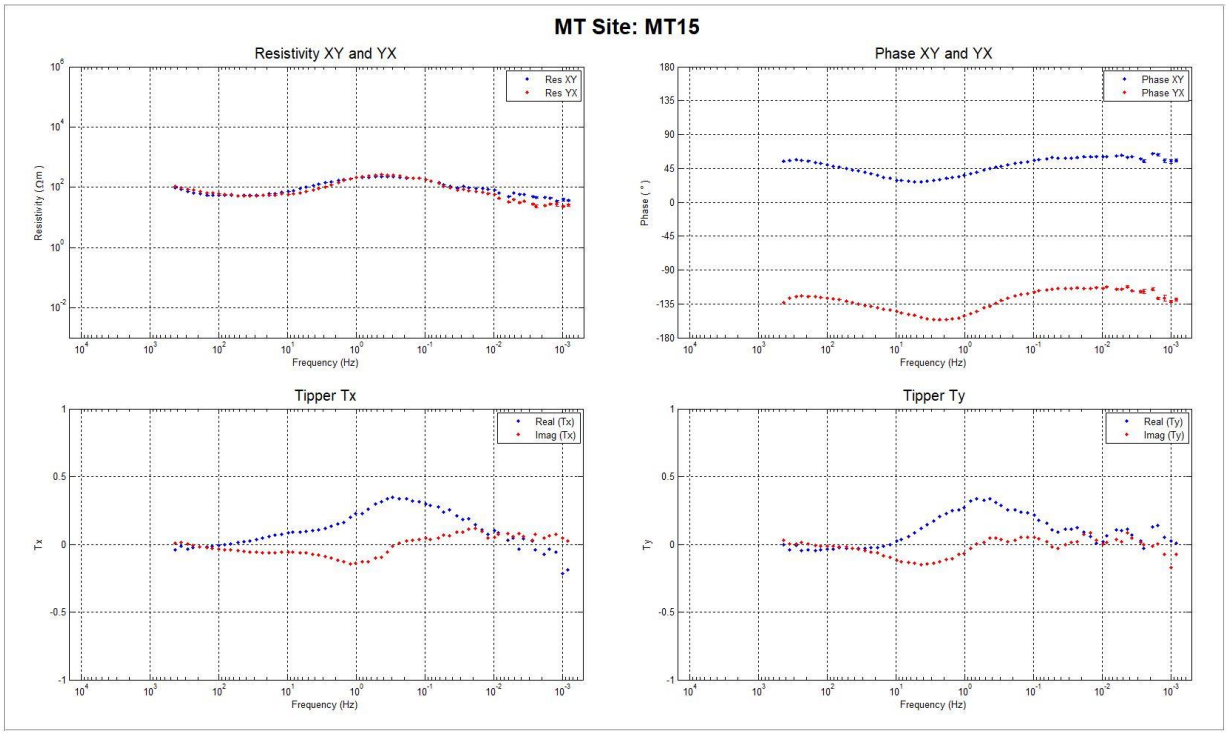

MT Site: MT10
Resistivity XY and YX
Res XY
Res YX
Resistivity (Ωm)
Frequency (Hz)
Phase XY and YX
Phase XY
Phase YX
Phase (°)
Frequency (Hz)
Tipper Tx
Real (Tx)
Imag (Tx)
Tx
Frequency (Hz)
Tipper Ty
Real (Ty)
Imag (Ty)
Ty
Frequency (Hz)

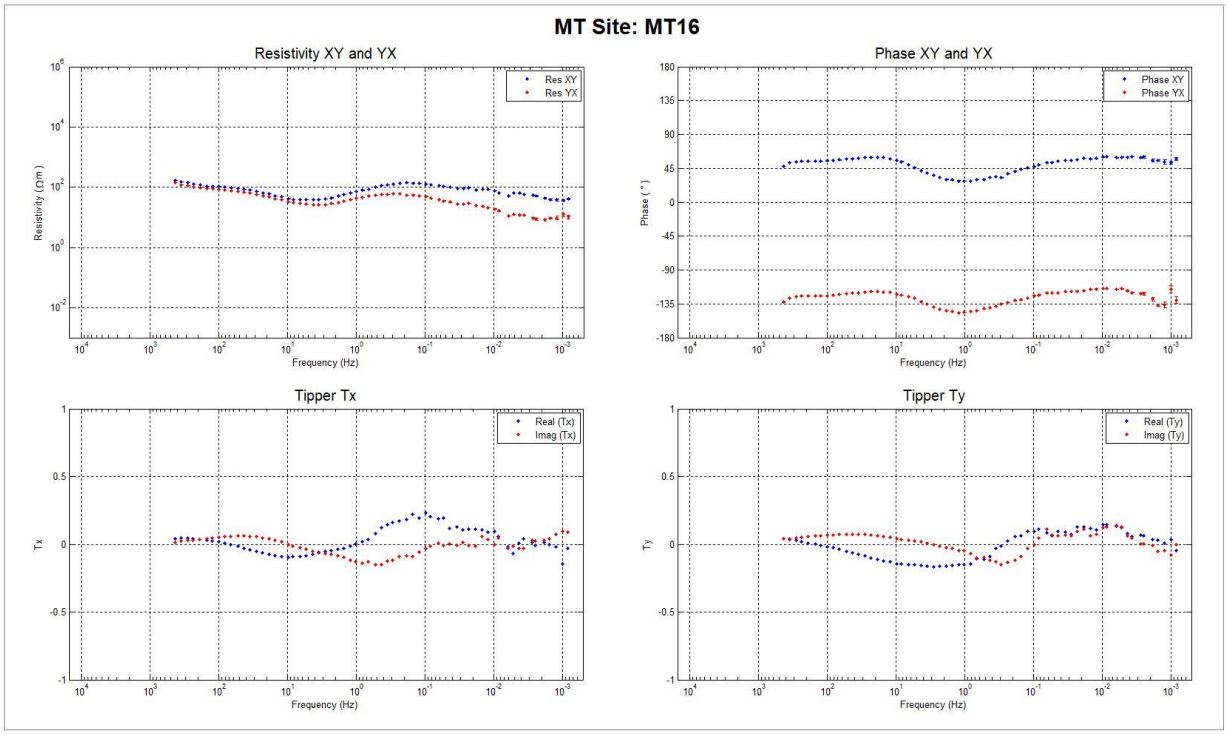

MT Site: MT11
Resistivity XY and YX
Res XY
Res YX
Resistivity (Ωm)
Frequency (Hz)
Phase XY and YX
Phase XY
Phase YX
Phase (°)
Frequency (Hz)
Tipper Tx
Real (Tx)
Imag (Tx)
Tx
Frequency (Hz)
Tipper Ty
Real (Ty)
Imag (Ty)
Ty
Frequency (Hz)

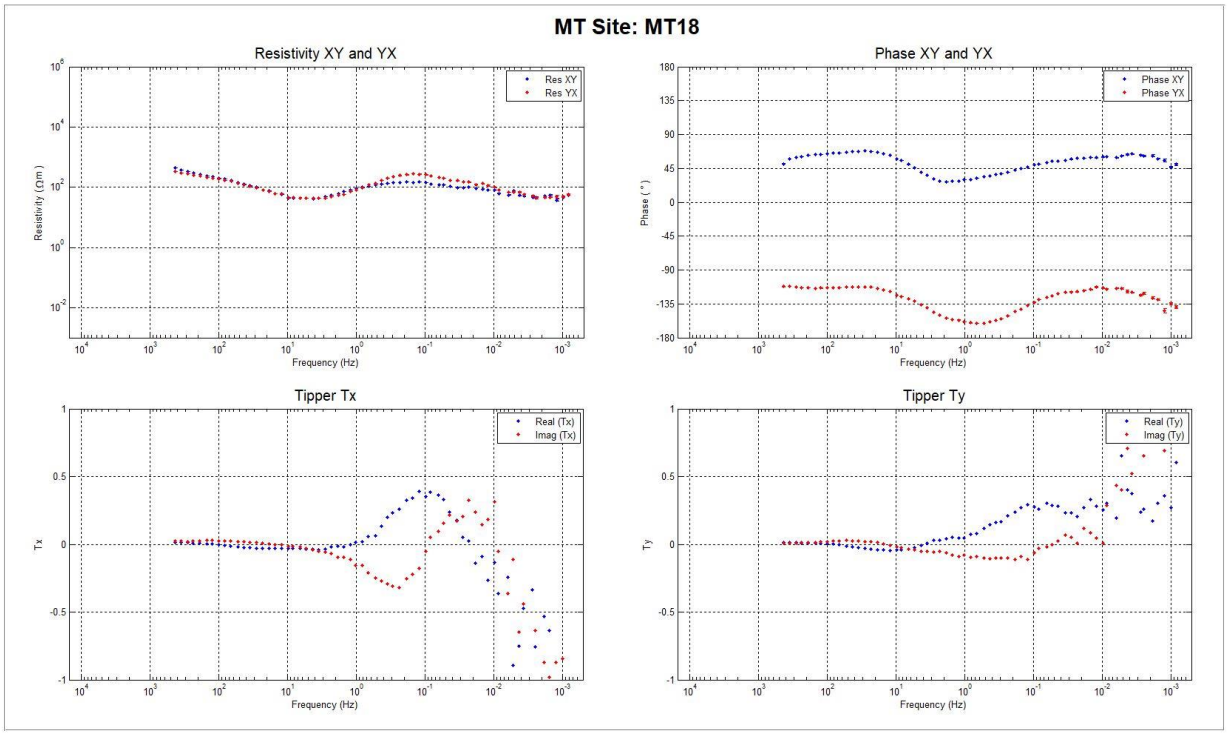

MT Site: MT12
Resistivity XY and YX
Res XY
Res YX
Resistivity (Ωm)
Frequency (Hz)
Phase XY and YX
Phase XY
Phase YX
Phase (°)
Frequency (Hz)
Tipper Tx
Real (Tx)
Imag (Tx)
Tx
Frequency (Hz)
Tipper Ty
Real (Ty)
Imag (Ty)
Ty
Frequency (Hz)

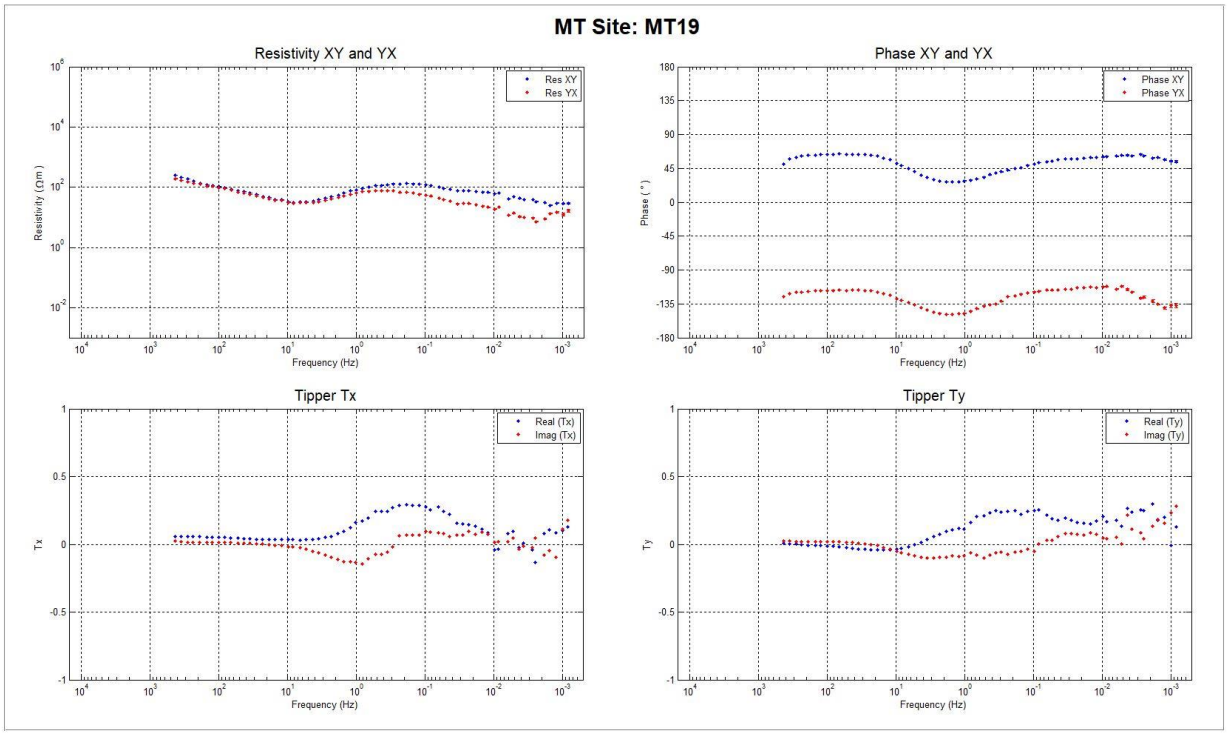

MT Site: MT13
Resistivity XY and YX
Res XY
Res YX
Resistivity (Ωm)
Frequency (Hz)
Phase XY and YX
Phase XY
Phase YX
Phase (°)
Frequency (Hz)
Tipper Tx
Real (Tx)
Imag (Tx)
Tx
Frequency (Hz)
Tipper Ty
Real (Ty)
Imag (Ty)
Ty
Frequency (Hz)

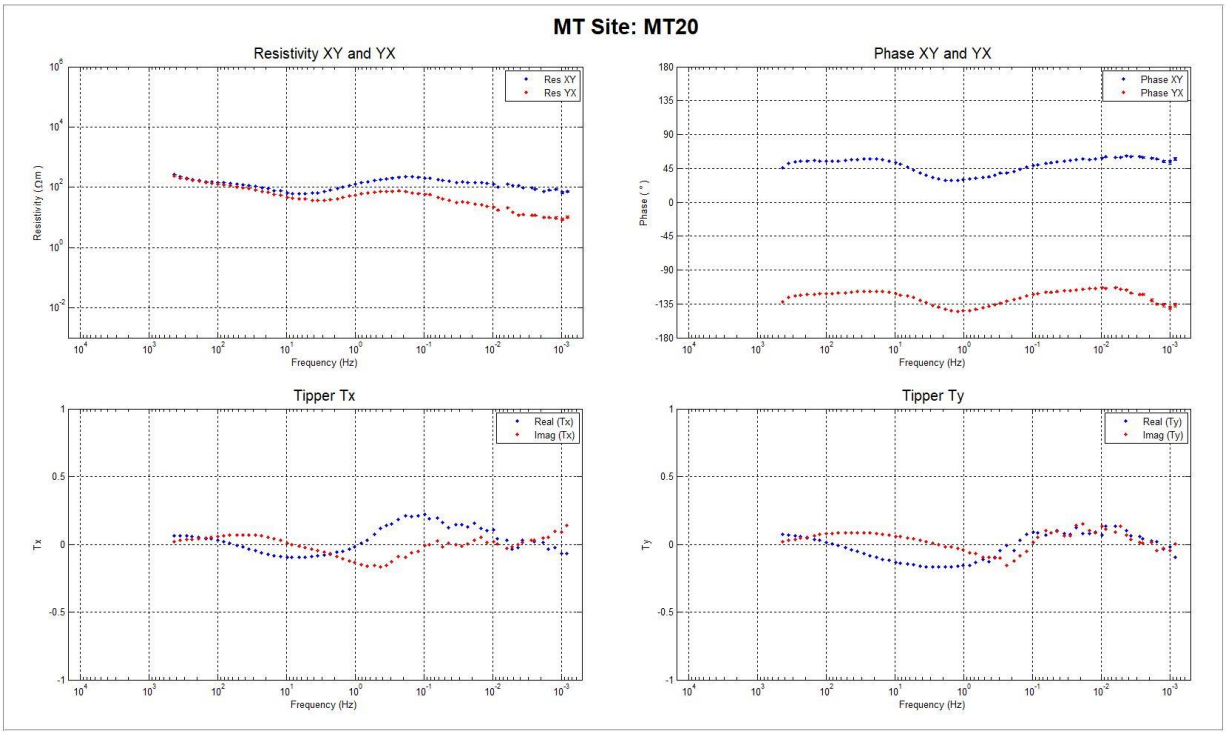

MT Site: MT14
Resistivity XY and YX
Res XY
Res YX
Resistivity (Ωm)
Frequency (Hz)
Phase XY and YX
Phase XY
Phase YX
Phase (°)
Frequency (Hz)
Tipper Tx
Real (Tx)
Imag (Tx)
Tx
Frequency (Hz)
Tipper Ty
Real (Ty)
Imag (Ty)
Ty
Frequency (Hz)

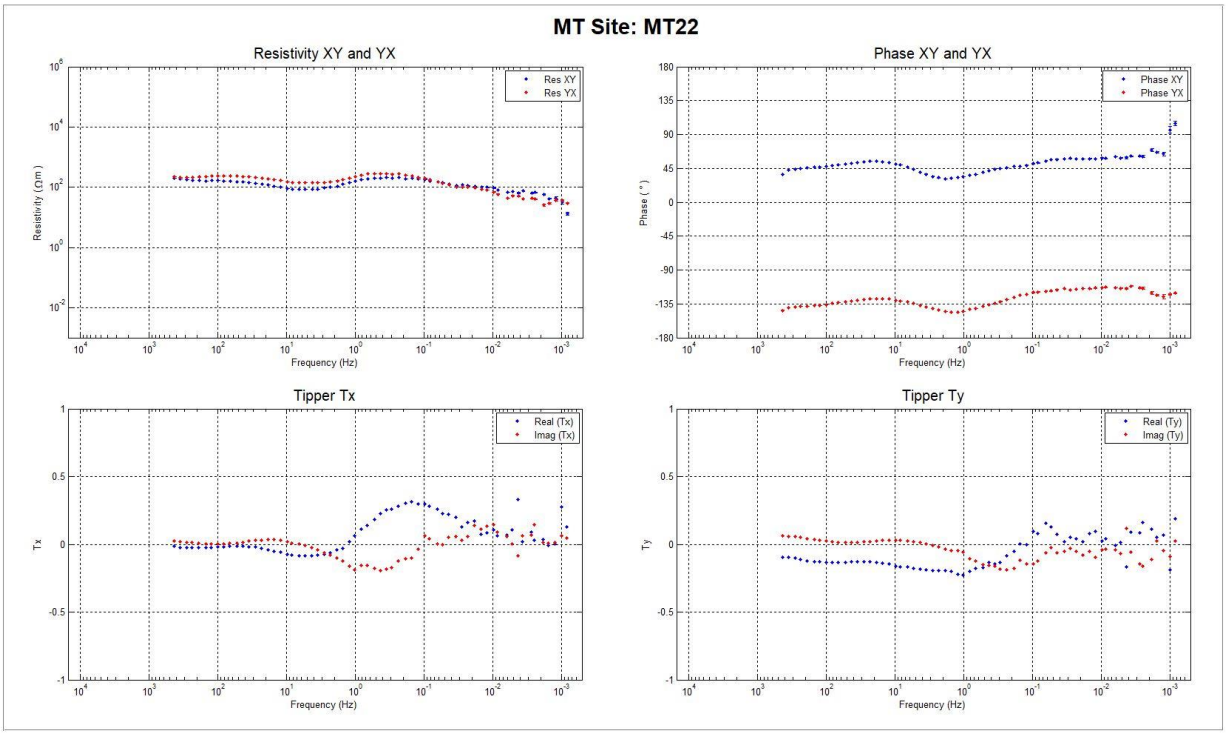

MT Site: MT15
Resistivity XY and YX
Res XY
Res YX
Resistivity (Ωm)
Frequency (Hz)
Phase XY and YX
Phase XY
Phase YX
Phase (°)
Frequency (Hz)
Tipper Tx
Real (Tx)
Imag (Tx)
Tx
Frequency (Hz)
Tipper Ty
Real (Ty)
Imag (Ty)
Ty
Frequency (Hz)

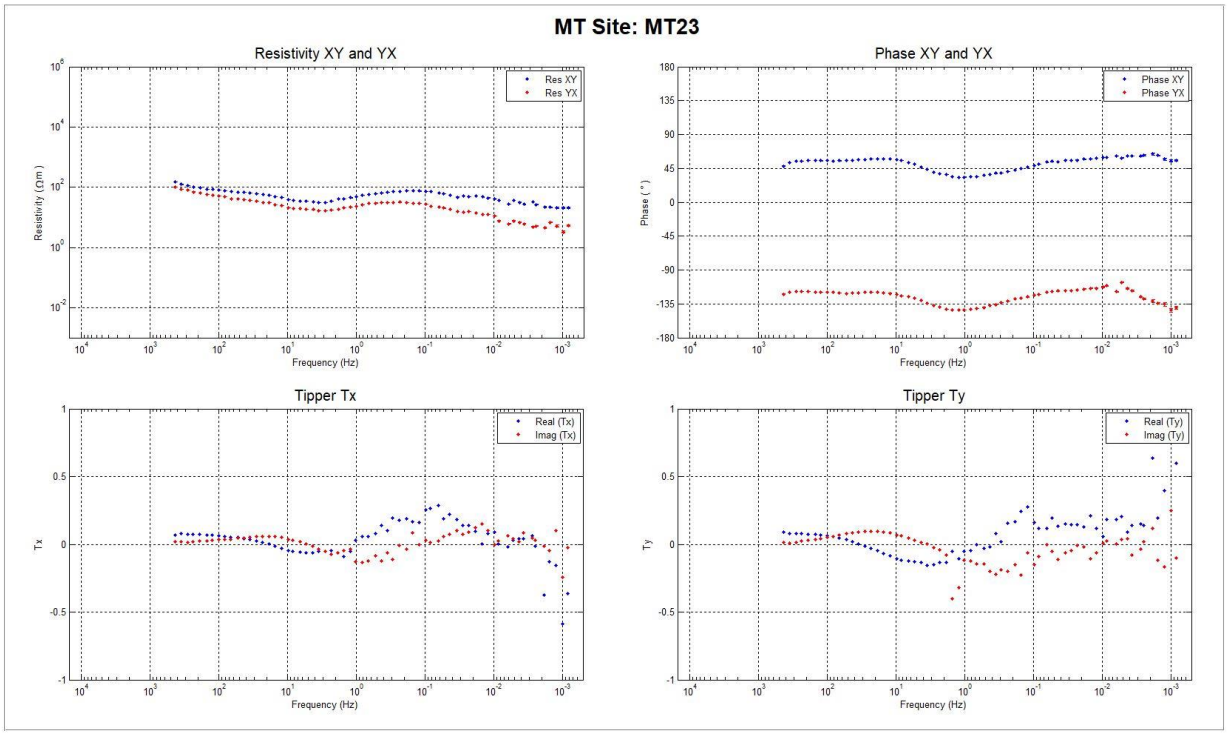

MT Site: MT16
Resistivity XY and YX
Res XY
Res YX
Resistivity (Ωm)
Frequency (Hz)
Phase XY and YX
Phase XY
Phase YX
Phase (°)
Frequency (Hz)
Tipper Tx
Real (Tx)
Imag (Tx)
Tx
Frequency (Hz)
Tipper Ty
Real (Ty)
Imag (Ty)
Ty
Frequency (Hz)

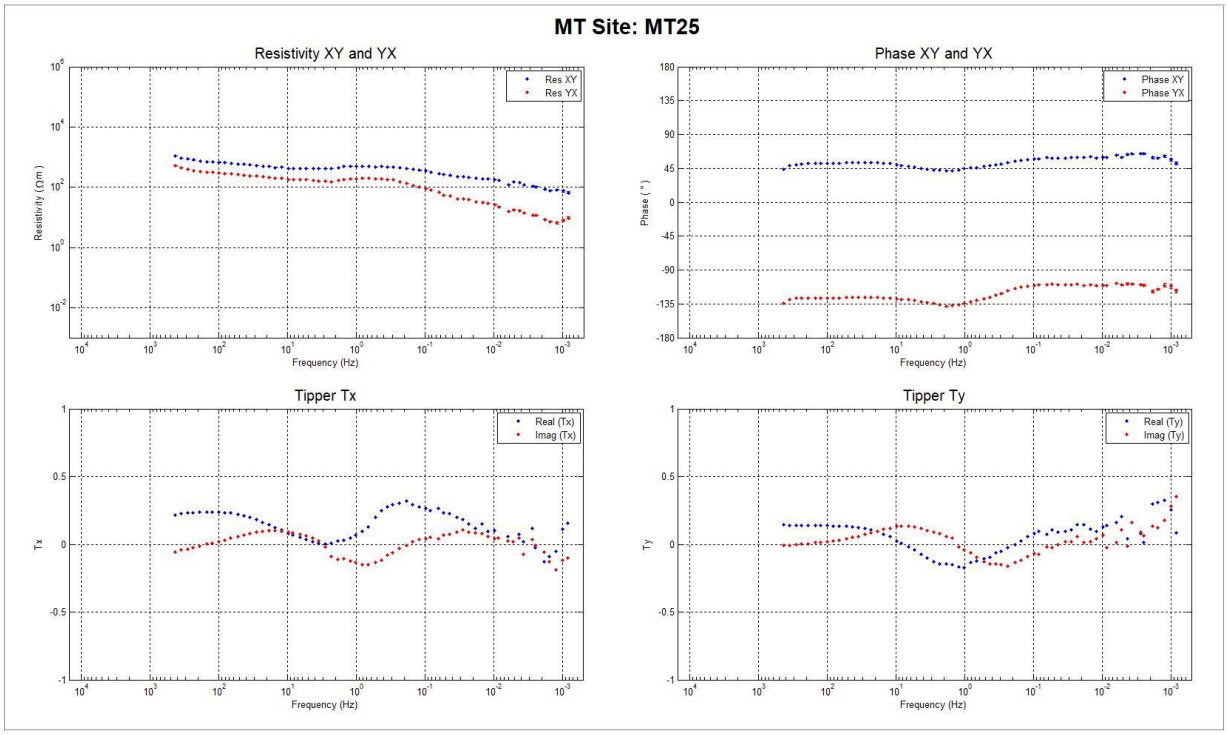

MT Site: MT18
Resistivity XY and YX
Res XY
Res YX
Resistivity (Ωm)
Frequency (Hz)
Phase XY and YX
Phase XY
Phase YX
Phase (°)
Frequency (Hz)
Tipper Tx
Real (Tx)
Imag (Tx)
Tx
Frequency (Hz)
Tipper Ty
Real (Ty)
Imag (Ty)
Ty
Frequency (Hz)

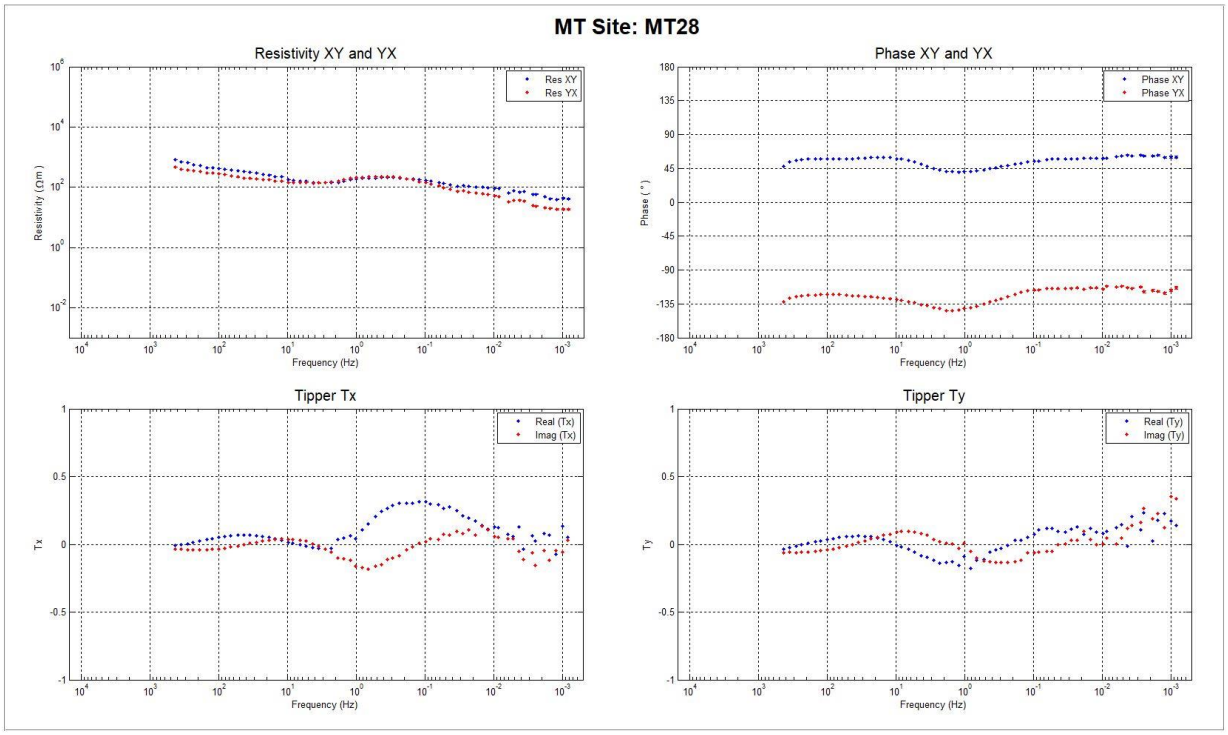

MT Site: MT19
Resistivity XY and YX
Res XY
Res YX
Resistivity (Ωm)
Frequency (Hz)
Phase XY and YX
Phase XY
Phase YX
Phase (°)
Frequency (Hz)
Tipper Tx
Real (Tx)
Imag (Tx)
Tx
Frequency (Hz)
Tipper Ty
Real (Ty)
Imag (Ty)
Ty
Frequency (Hz)

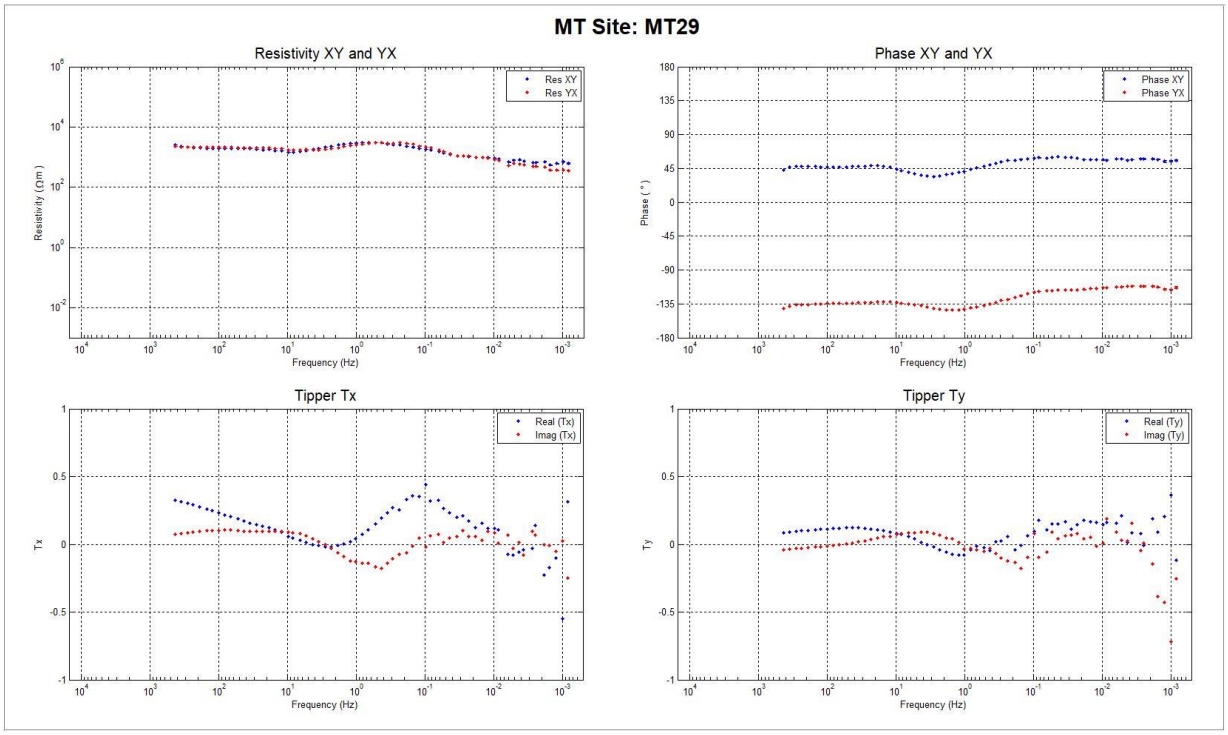

MT Site: MT20
Resistivity XY and YX
Res XY
Res YX
Resistivity (Ωm)
Frequency (Hz)
Phase XY and YX
Phase XY
Phase YX
Phase (°)
Frequency (Hz)
Tipper Tx
Real (Tx)
Imag (Tx)
Tx
Frequency (Hz)
Tipper Ty
Real (Ty)
Imag (Ty)
Ty
Frequency (Hz)

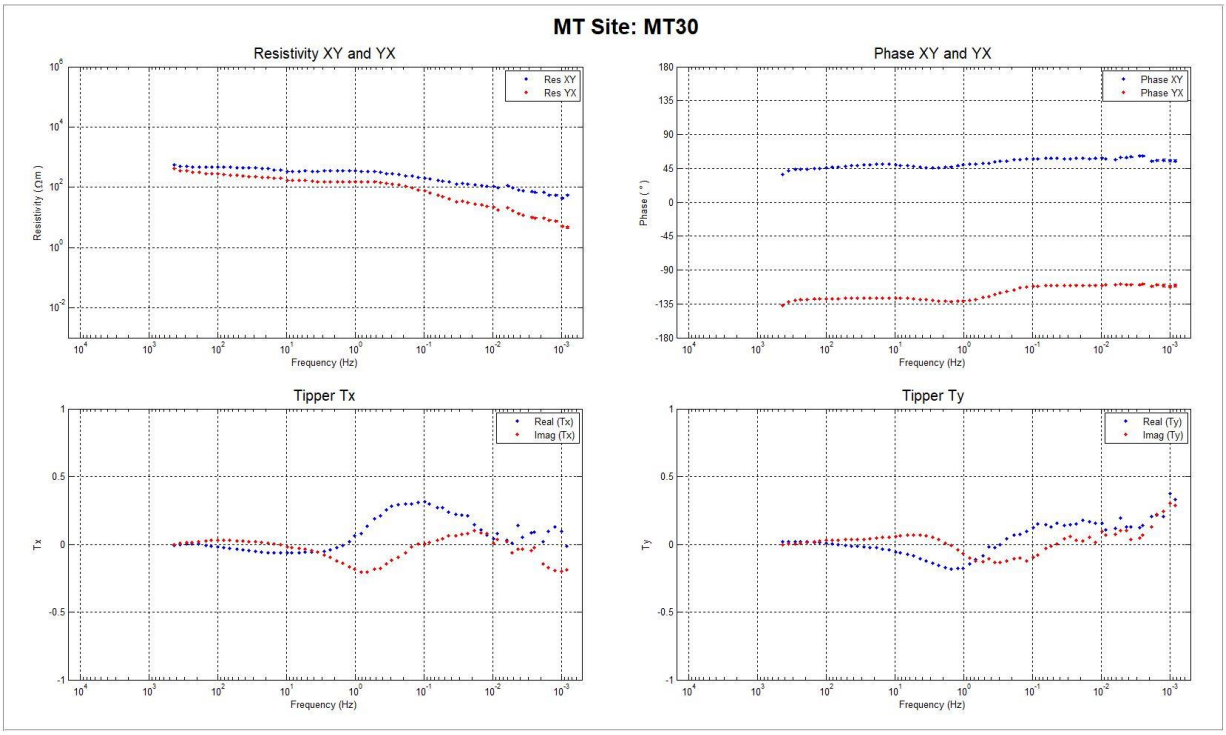

MT Site: MT22
Resistivity XY and YX
Res XY
Res YX
Resistivity (Ωm)
Frequency (Hz)
Phase XY and YX
Phase XY
Phase YX
Phase (°)
Frequency (Hz)
Tipper Tx
Real (Tx)
Imag (Tx)
Tx
Frequency (Hz)
Tipper Ty
Real (Ty)
Imag (Ty)
Ty
Frequency (Hz)

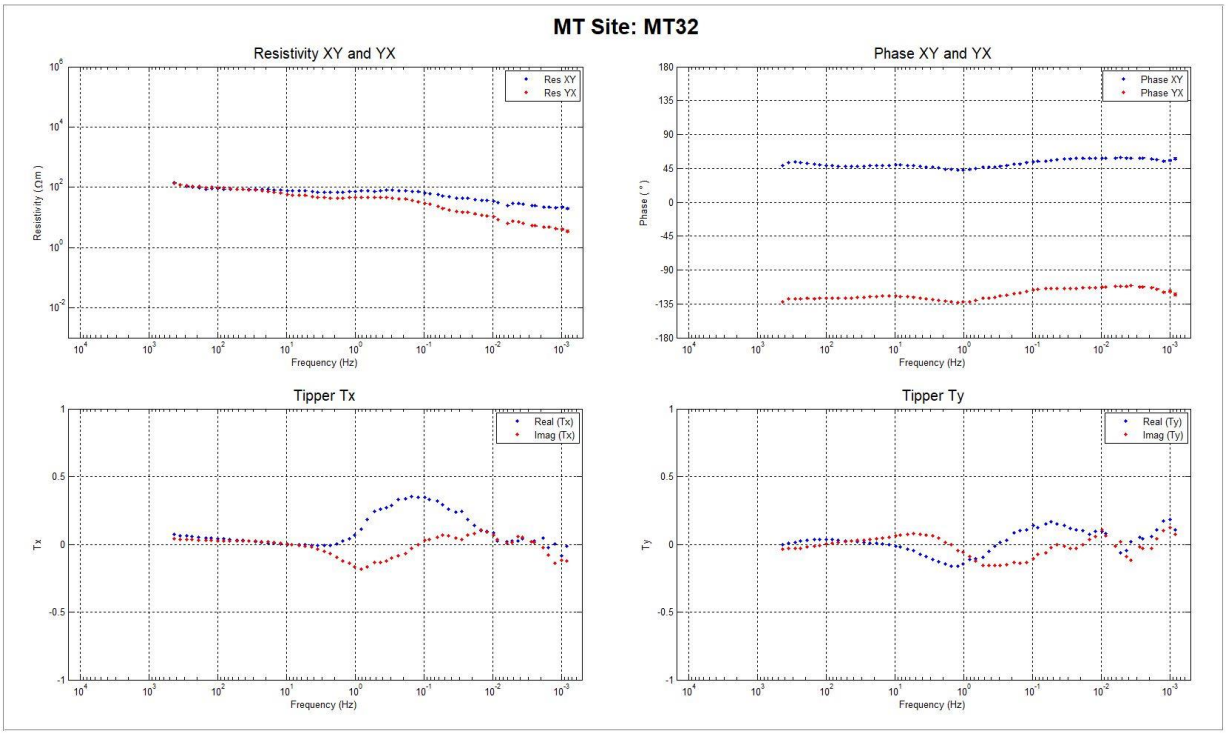

MT Site: MT23
Resistivity XY and YX
Res XY
Res YX
Resistivity (Ωm)
Frequency (Hz)
Phase XY and YX
Phase XY
Phase YX
Phase (°)
Frequency (Hz)
Tipper Tx
Real (Tx)
Imag (Tx)
Tx
Frequency (Hz)
Tipper Ty
Real (Ty)
Imag (Ty)
Ty
Frequency (Hz)

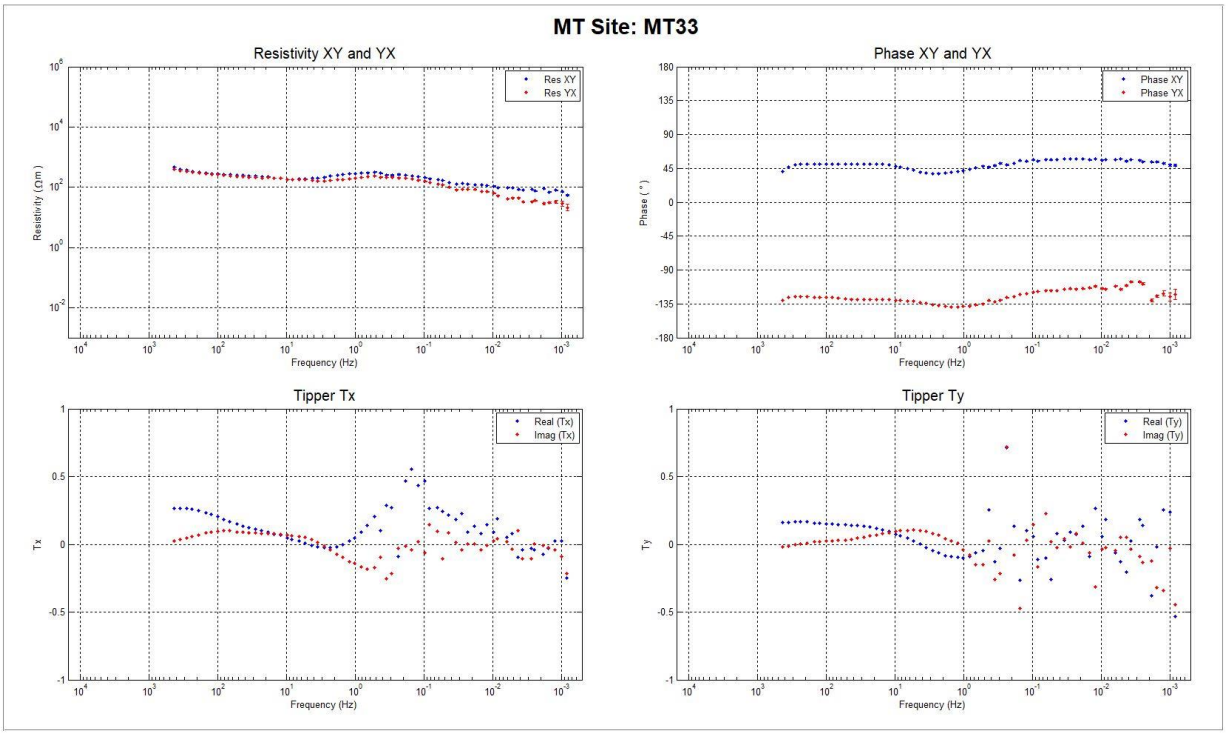

MT Site: MT25
Resistivity XY and YX
Res XY
Res YX
Resistivity (Ωm)
Frequency (Hz)
Phase XY and YX
Phase XY
Phase YX
Phase (°)
Frequency (Hz)
Tipper Tx
Real (Tx)
Imag (Tx)
Tx
Frequency (Hz)
Tipper Ty
Real (Ty)
Imag (Ty)
Ty
Frequency (Hz)

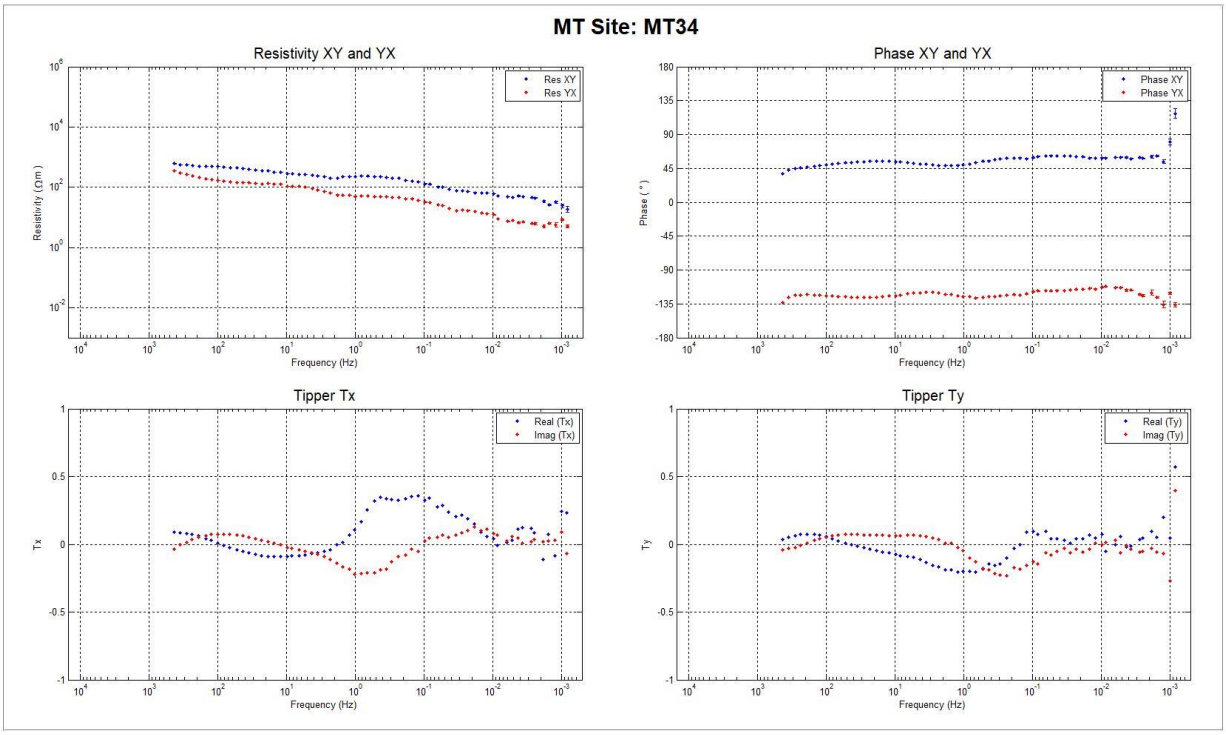

MT Site: MT28
Resistivity XY and YX
Res XY
Res YX
Resistivity (Ωm)
Frequency (Hz)
Phase XY and YX
Phase XY
Phase YX
Phase (°)
Frequency (Hz)
Tipper Tx
Real (Tx)
Imag (Tx)
Tx
Frequency (Hz)
Tipper Ty
Real (Ty)
Imag (Ty)
Ty
Frequency (Hz)

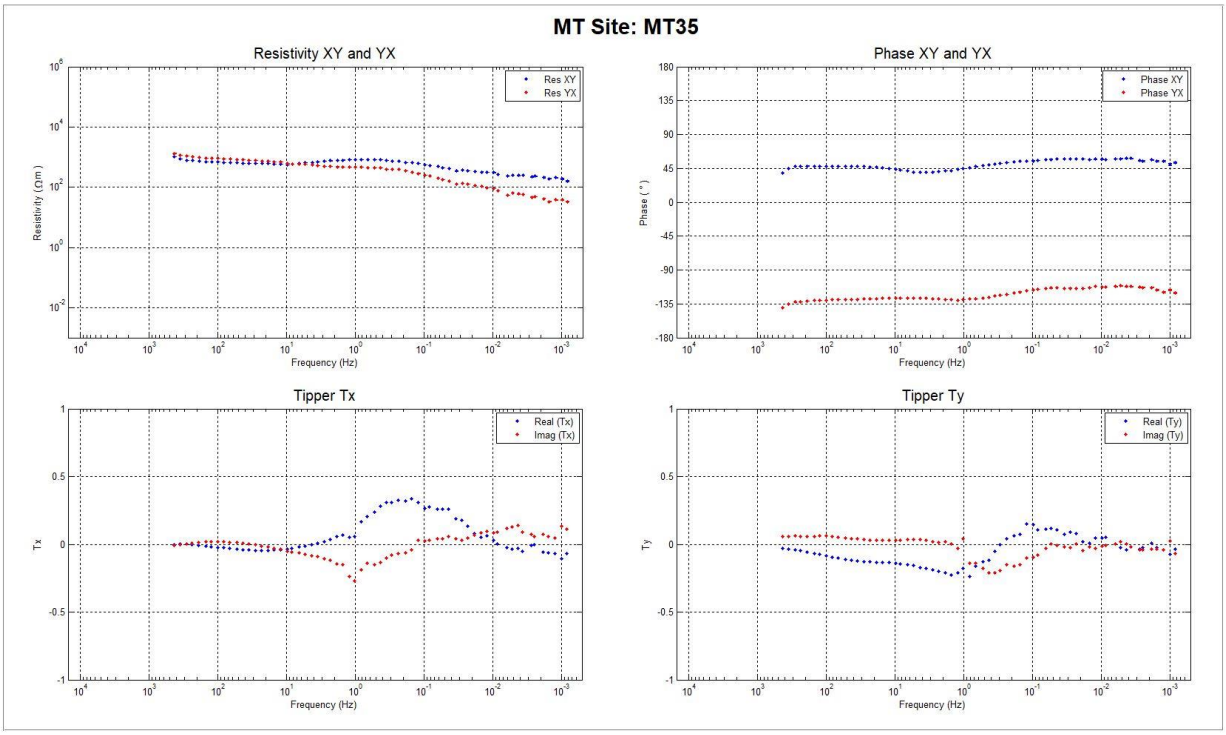

MT Site: MT29
Resistivity XY and YX
Res XY
Res YX
Resistivity (Ωm)
Frequency (Hz)
Phase XY and YX
Phase XY
Phase YX
Phase (°)
Frequency (Hz)
Tipper Tx
Real (Tx)
Imag (Tx)
Tx
Frequency (Hz)
Tipper Ty
Real (Ty)
Imag (Ty)
Ty
Frequency (Hz)

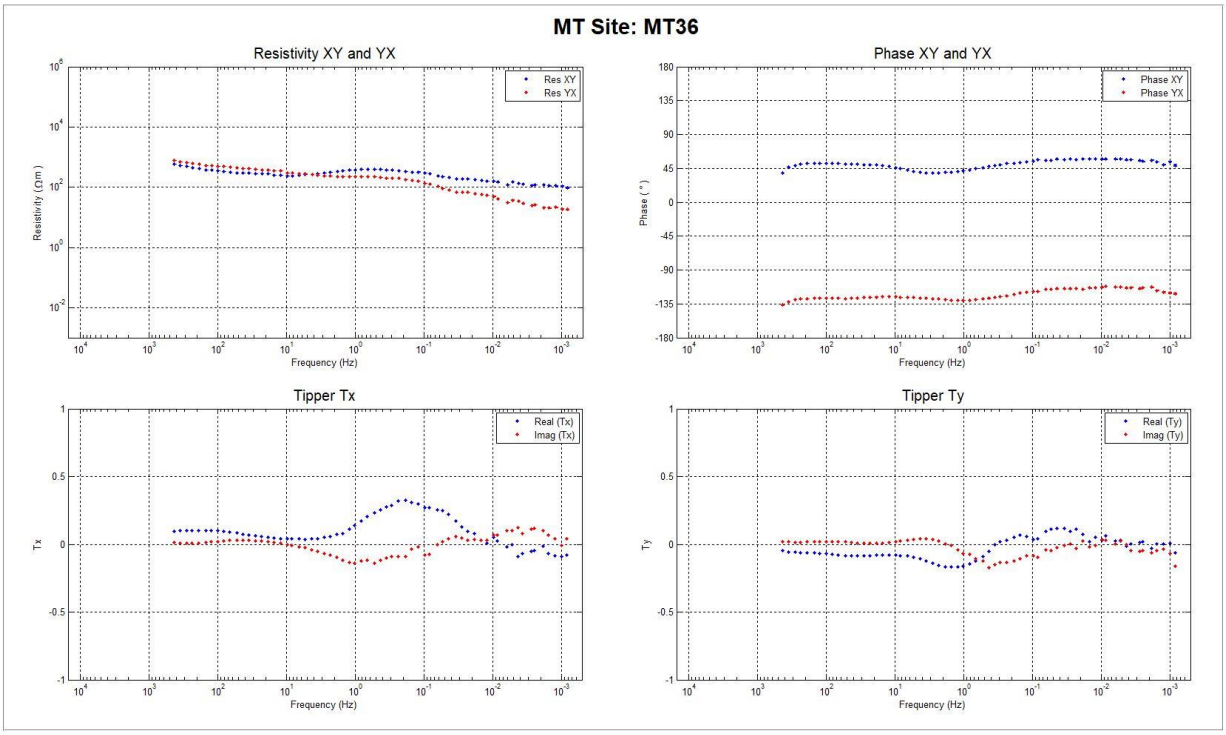

MT Site: MT30
Resistivity XY and YX
Res XY
Res YX
Resistivity (Ωm)
Frequency (Hz)
Phase XY and YX
Phase XY
Phase YX
Phase (°)
Frequency (Hz)
Tipper Tx
Real (Tx)
Imag (Tx)
Tx
Frequency (Hz)
Tipper Ty
Real (Ty)
Imag (Ty)
Ty
Frequency (Hz)

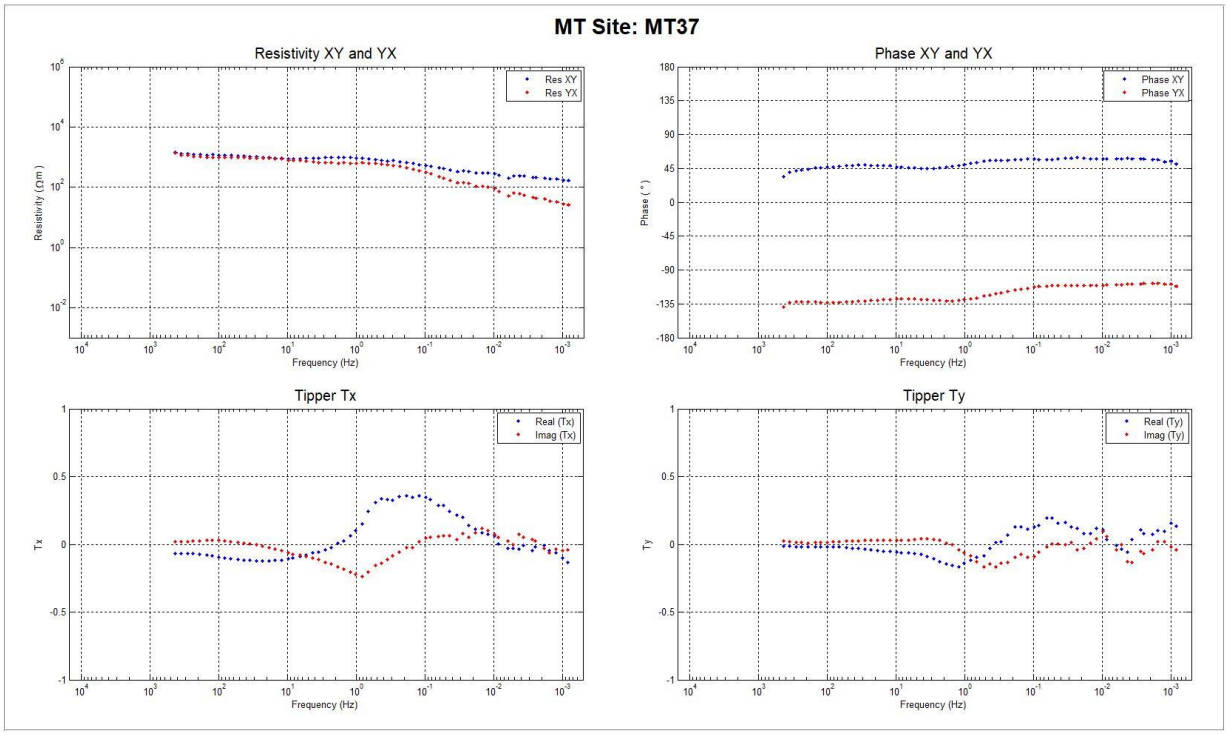

MT Site: MT32
Resistivity XY and YX
Res XY
Res YX
Resistivity (Ωm)
Frequency (Hz)
Phase XY and YX
Phase XY
Phase YX
Phase (°)
Frequency (Hz)
Tipper Tx
Real (Tx)
Imag (Tx)
Tx
Frequency (Hz)
Tipper Ty
Real (Ty)
Imag (Ty)
Ty
Frequency (Hz)

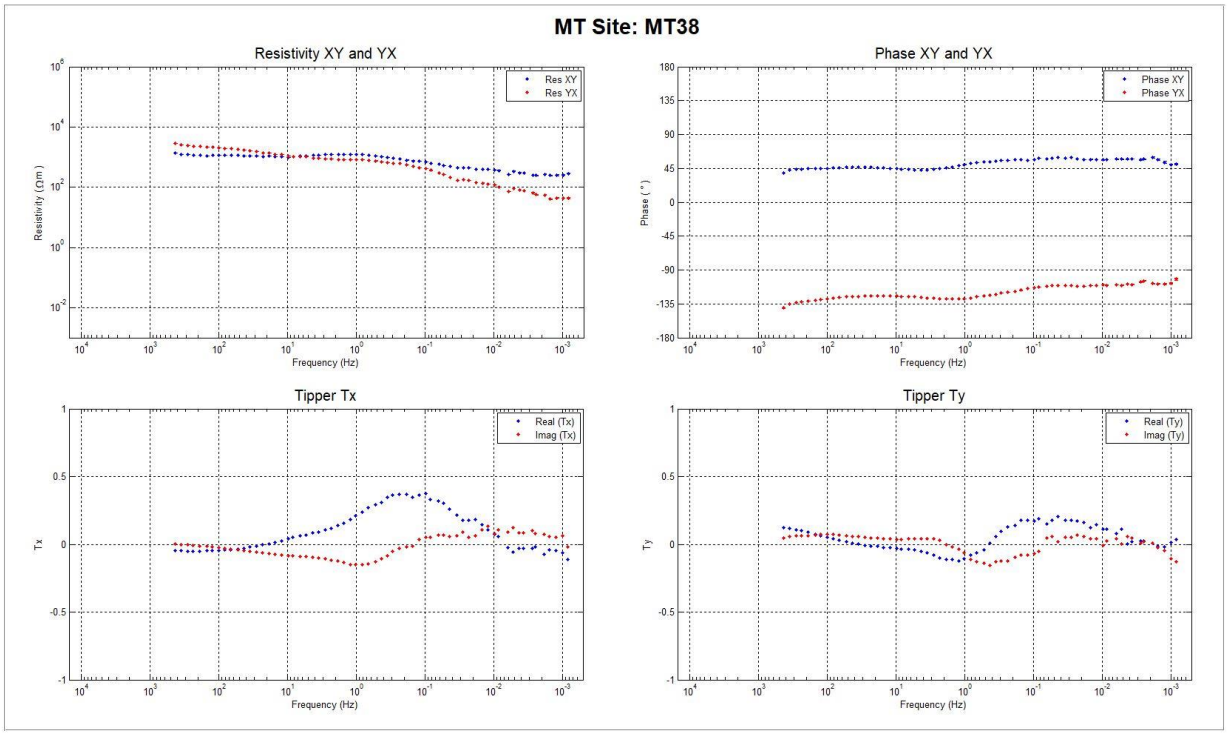

MT Site: MT33
Resistivity XY and YX
Res XY
Res YX
Resistivity (Ωm)
Frequency (Hz)
Phase XY and YX
Phase XY
Phase YX
Phase (°)
Frequency (Hz)
Tipper Tx
Real (Tx)
Imag (Tx)
Tx
Frequency (Hz)
Tipper Ty
Real (Ty)
Imag (Ty)
Ty
Frequency (Hz)

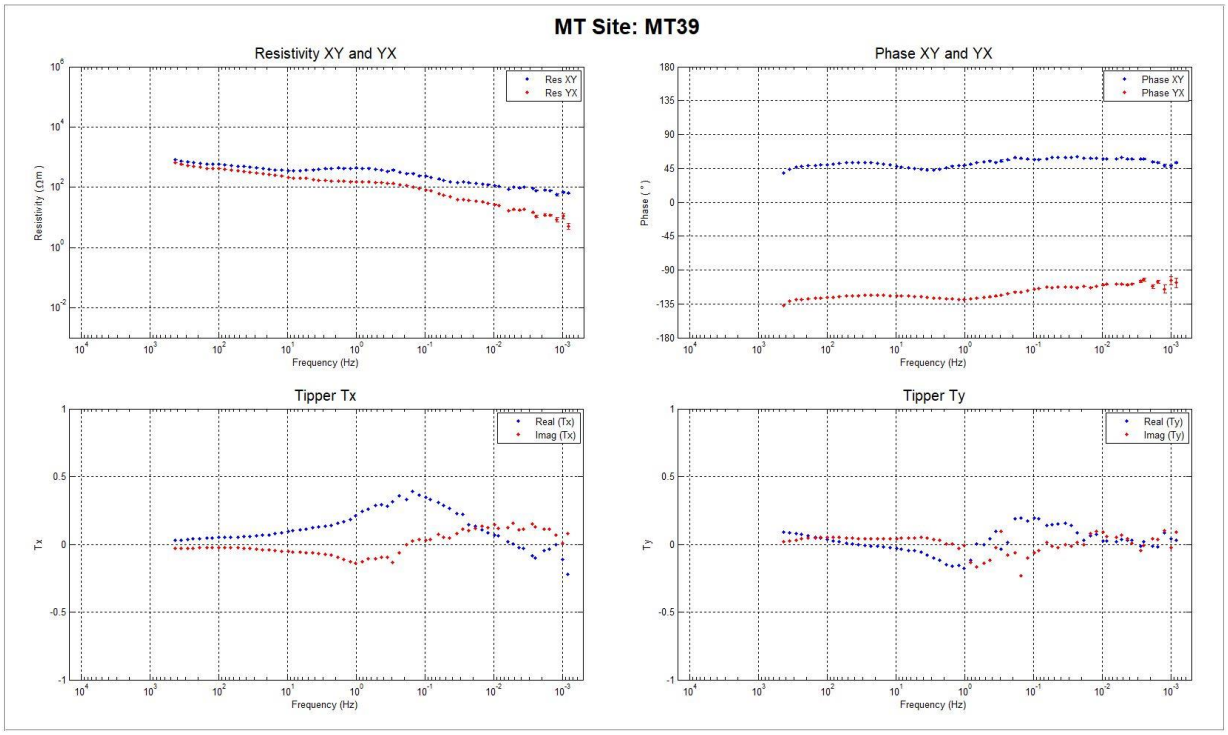

MT Site: MT34
Resistivity XY and YX
Res XY
Res YX
Resistivity (Ωm)
Frequency (Hz)
Phase XY and YX
Phase XY
Phase YX
Phase (°)
Frequency (Hz)
Tipper Tx
Real (Tx)
Imag (Tx)
Tx
Frequency (Hz)
Tipper Ty
Real (Ty)
Imag (Ty)
Ty
Frequency (Hz)

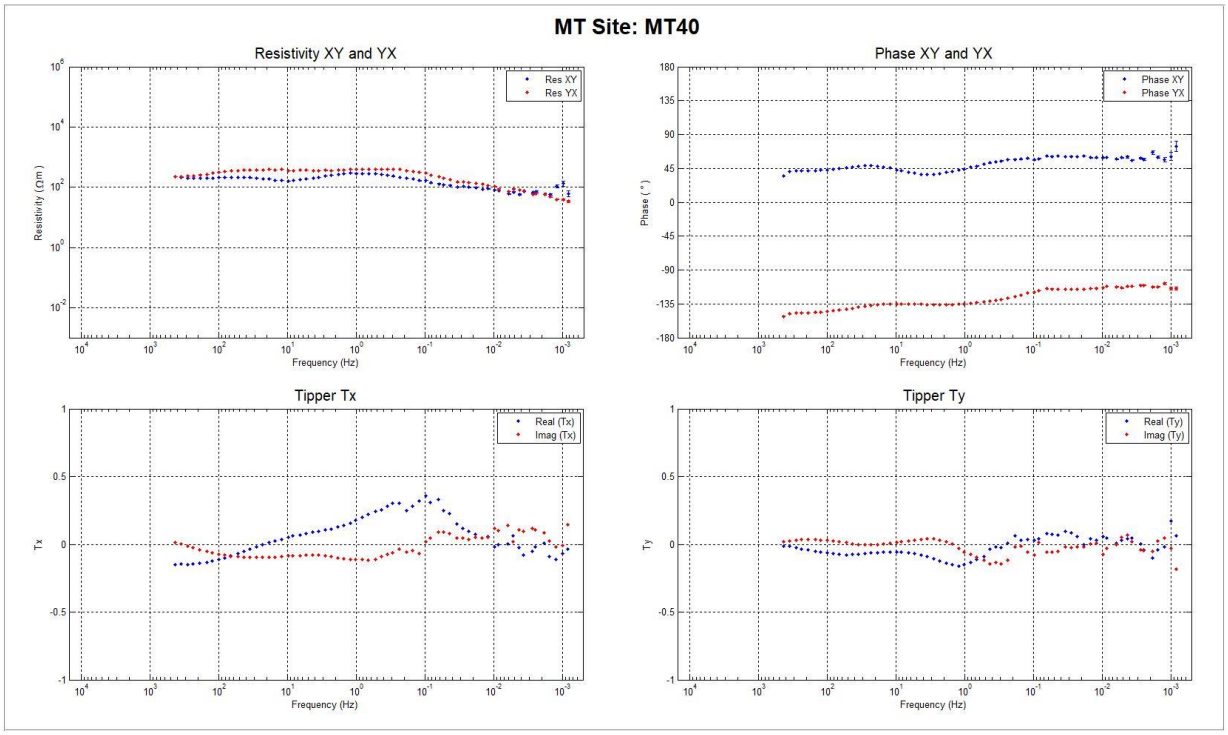

MT Site: MT35
Resistivity XY and YX
Res XY
Res YX
Resistivity (Ωm)
Frequency (Hz)
Phase XY and YX
Phase XY
Phase YX
Phase (°)
Frequency (Hz)
Tipper Tx
Real (Tx)
Imag (Tx)
Tx
Frequency (Hz)
Tipper Ty
Real (Ty)
Imag (Ty)
Ty
Frequency (Hz)

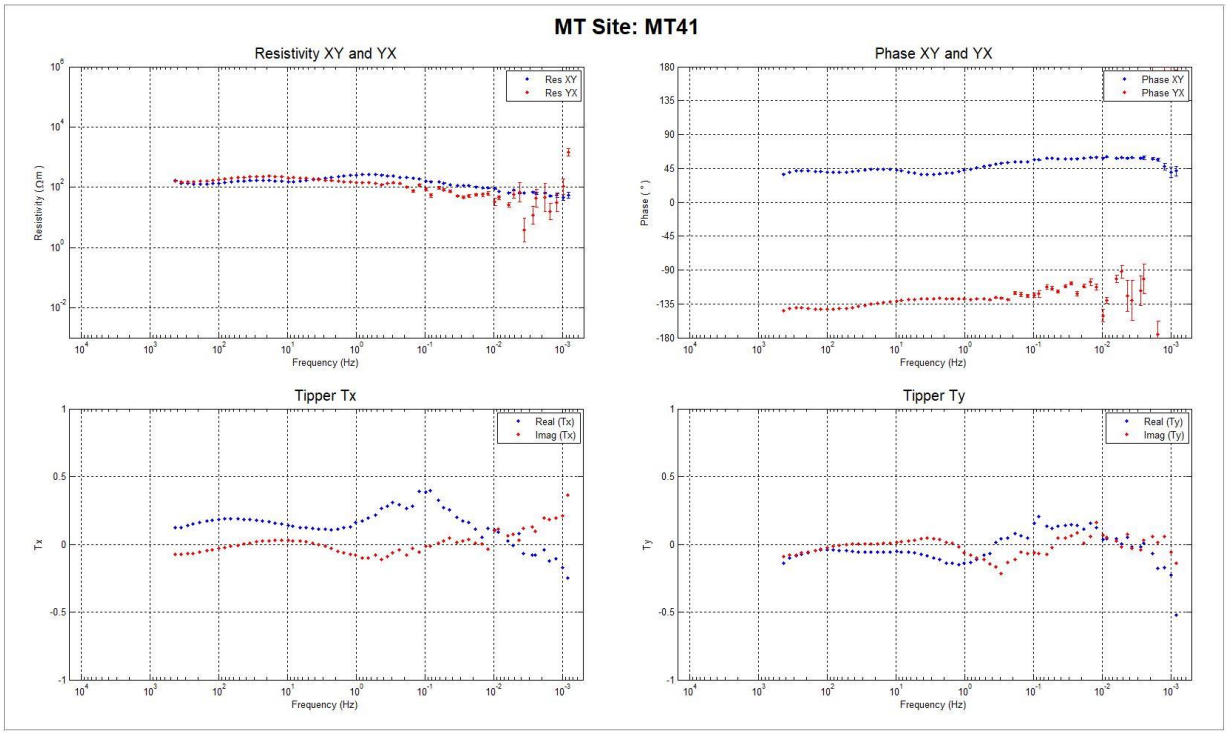

MT Site: MT36
Resistivity XY and YX
Res XY
Res YX
Resistivity (Ωm)
Frequency (Hz)
Phase XY and YX
Phase XY
Phase YX
Phase (°)
Frequency (Hz)
Tipper Tx
Real (Tx)
Imag (Tx)
Tx
Frequency (Hz)
Tipper Ty
Real (Ty)
Imag (Ty)
Ty
Frequency (Hz)

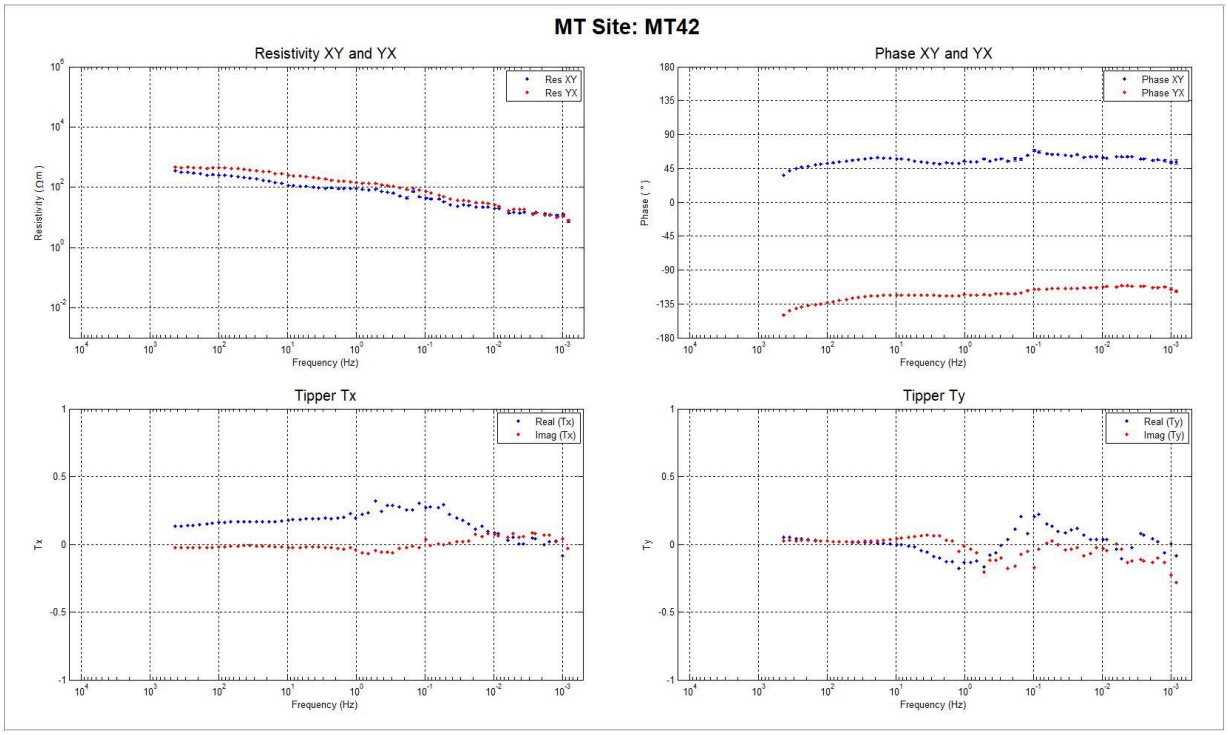

MT Site: MT37
Resistivity XY and YX
Res XY
Res YX
Resistivity (Ωm)
Frequency (Hz)
Phase XY and YX
Phase XY
Phase YX
Phase (°)
Frequency (Hz)
Tipper Tx
Real (Tx)
Imag (Tx)
Tx
Frequency (Hz)
Tipper Ty
Real (Ty)
Imag (Ty)
Ty
Frequency (Hz)

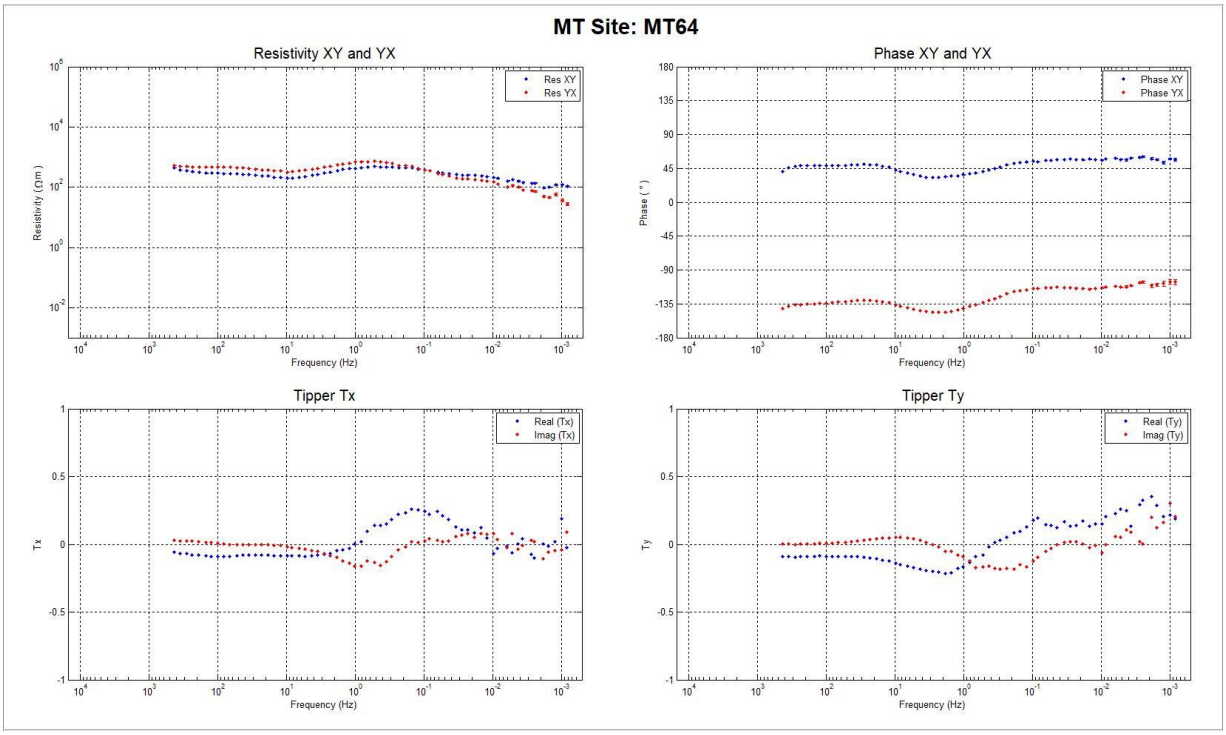

MT Site: MT38
Resistivity XY and YX
Res XY
Res YX
Resistivity (Ωm)
Frequency (Hz)
Phase XY and YX
Phase XY
Phase YX
Phase (°)
Frequency (Hz)
Tipper Tx
Real (Tx)
Imag (Tx)
Tx
Frequency (Hz)
Tipper Ty
Real (Ty)
Imag (Ty)
Ty
Frequency (Hz)

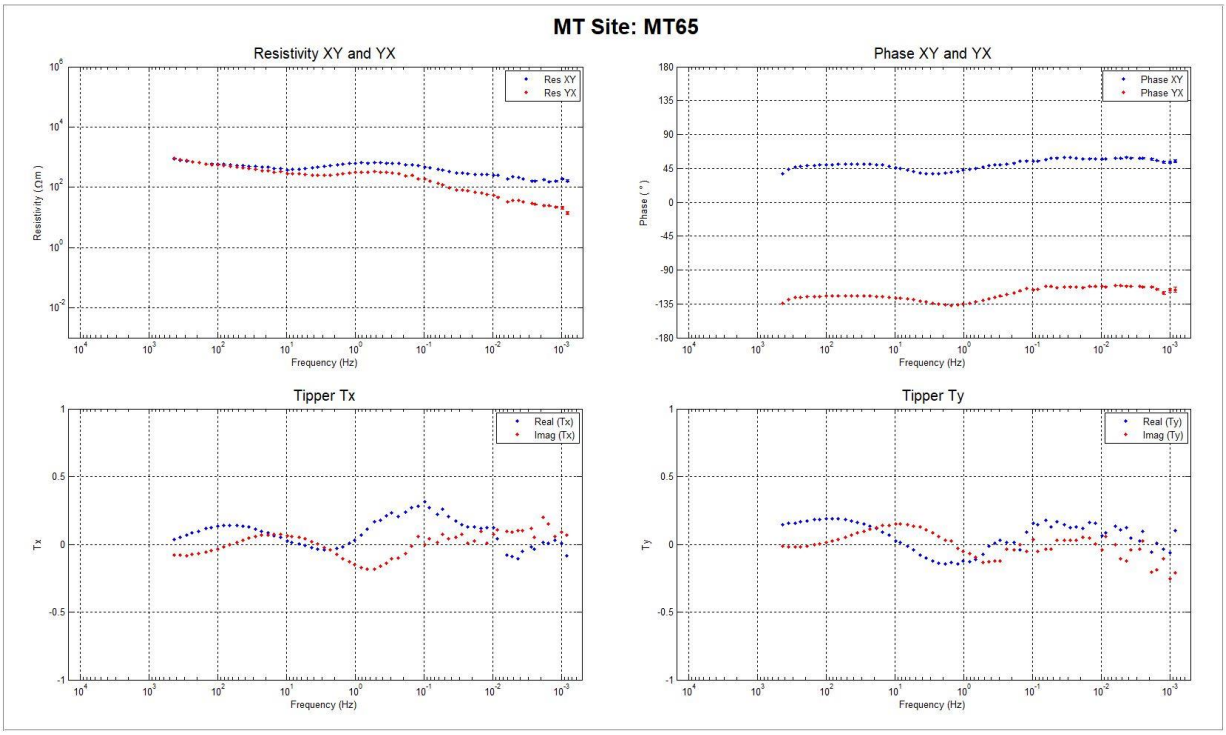

MT Site: MT39
Resistivity XY and YX
Res XY
Res YX
Resistivity (Ωm)
Frequency (Hz)
Phase XY and YX
Phase XY
Phase YX
Phase (°)
Frequency (Hz)
Tipper Tx
Real (Tx)
Imag (Tx)
Tx
Frequency (Hz)
Tipper Ty
Real (Ty)
Imag (Ty)
Ty
Frequency (Hz)

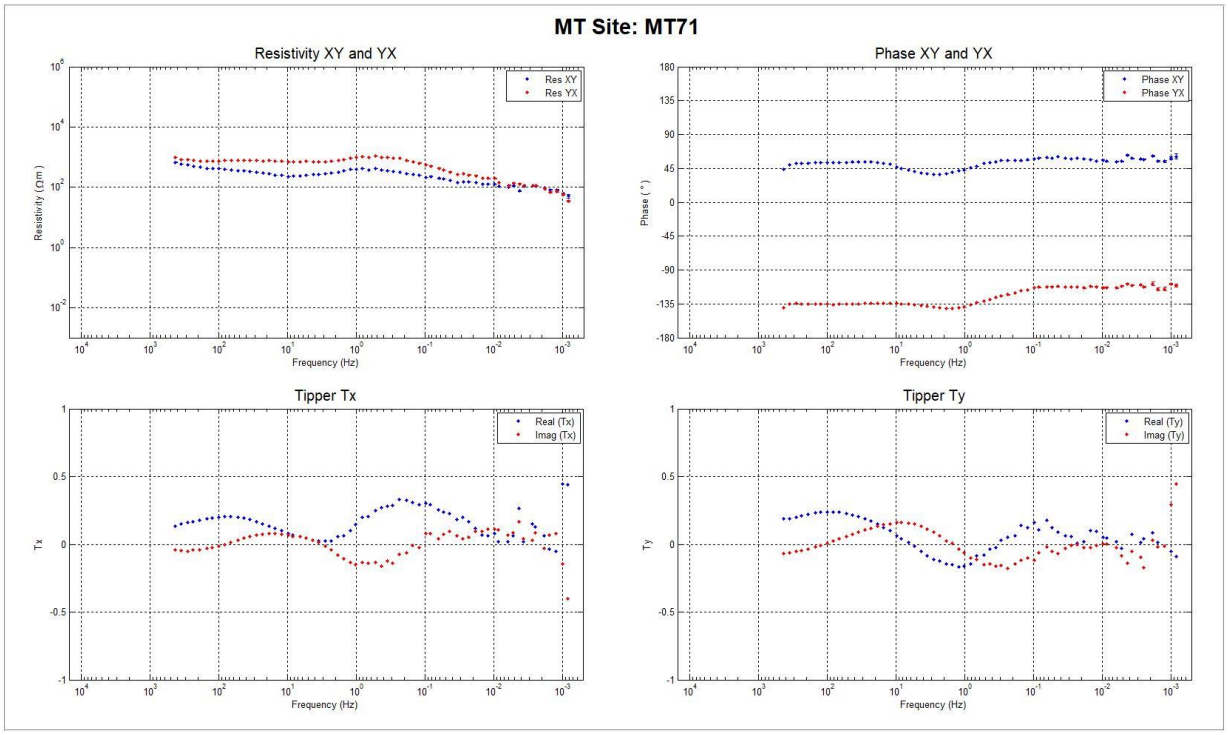

MT Site: MT40
Resistivity XY and YX
Res XY
Res YX
Resistivity (Ωm)
Frequency (Hz)
Phase XY and YX
Phase XY
Phase YX
Phase (°)
Frequency (Hz)
Tipper Tx
Real (Tx)
Imag (Tx)
Tx
Frequency (Hz)
Tipper Ty
Real (Ty)
Imag (Ty)
Ty
Frequency (Hz)

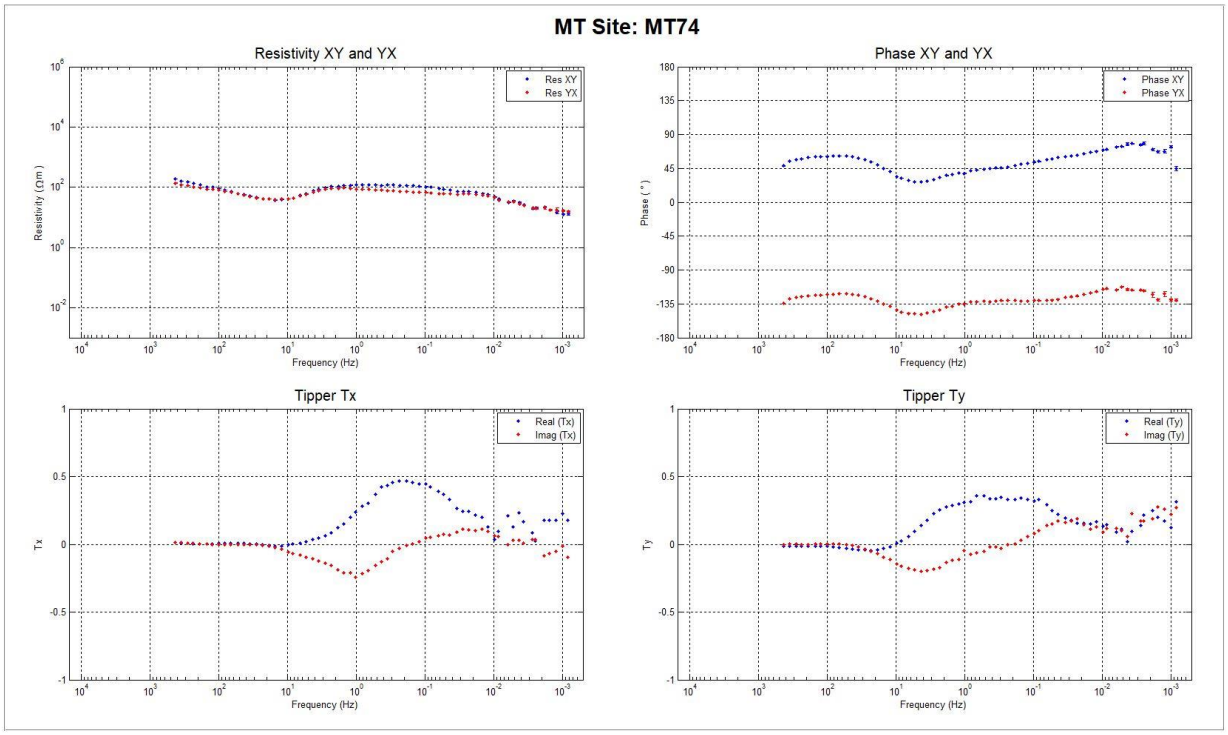

MT Site: MT41
Resistivity XY and YX
Res XY
Res YX
Resistivity (Ωm)
Frequency (Hz)
Phase XY and YX
Phase XY
Phase YX
Phase (°)
Frequency (Hz)
Tipper Tx
Real (Tx)
Imag (Tx)
Tx
Frequency (Hz)
Tipper Ty
Real (Ty)
Imag (Ty)
Ty
Frequency (Hz)

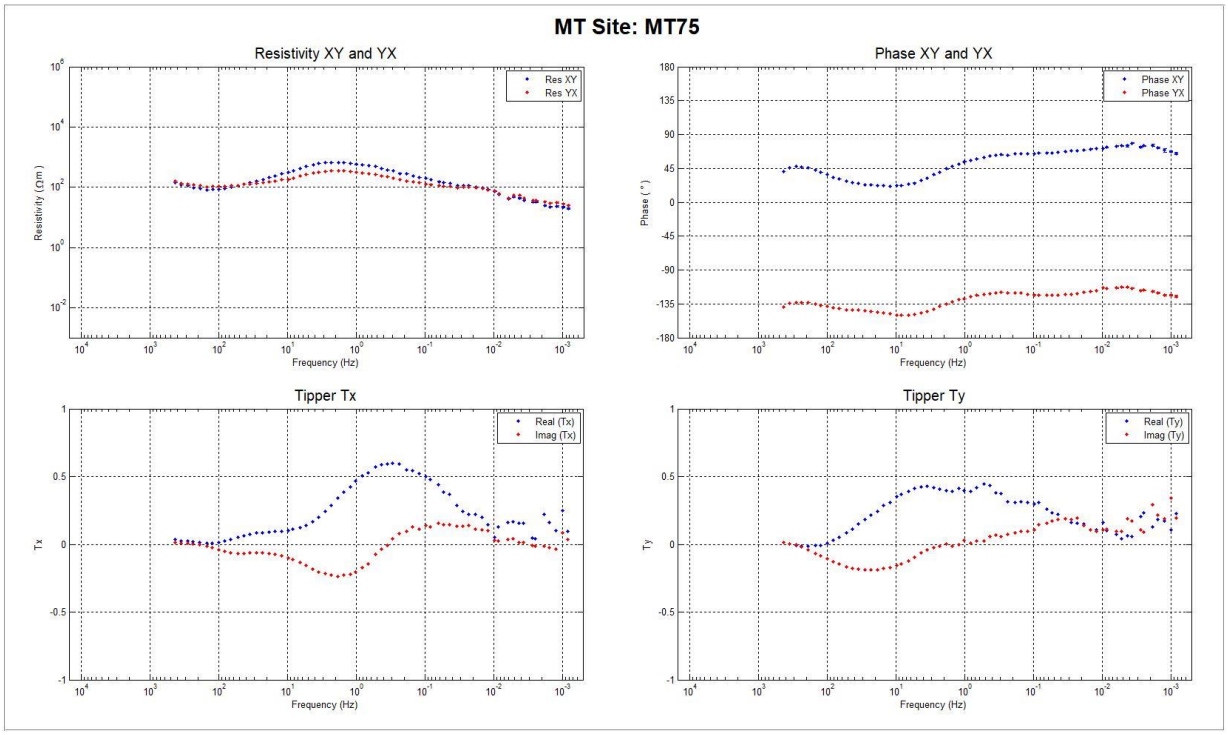

MT Site: MT42
Resistivity XY and YX
Res XY
Res YX
Resistivity (Ωm)
Frequency (Hz)
Phase XY and YX
Phase XY
Phase YX
Phase (°)
Frequency (Hz)
Tipper Tx
Real (Tx)
Imag (Tx)
Tx
Frequency (Hz)
Tipper Ty
Real (Ty)
Imag (Ty)
Ty
Frequency (Hz)

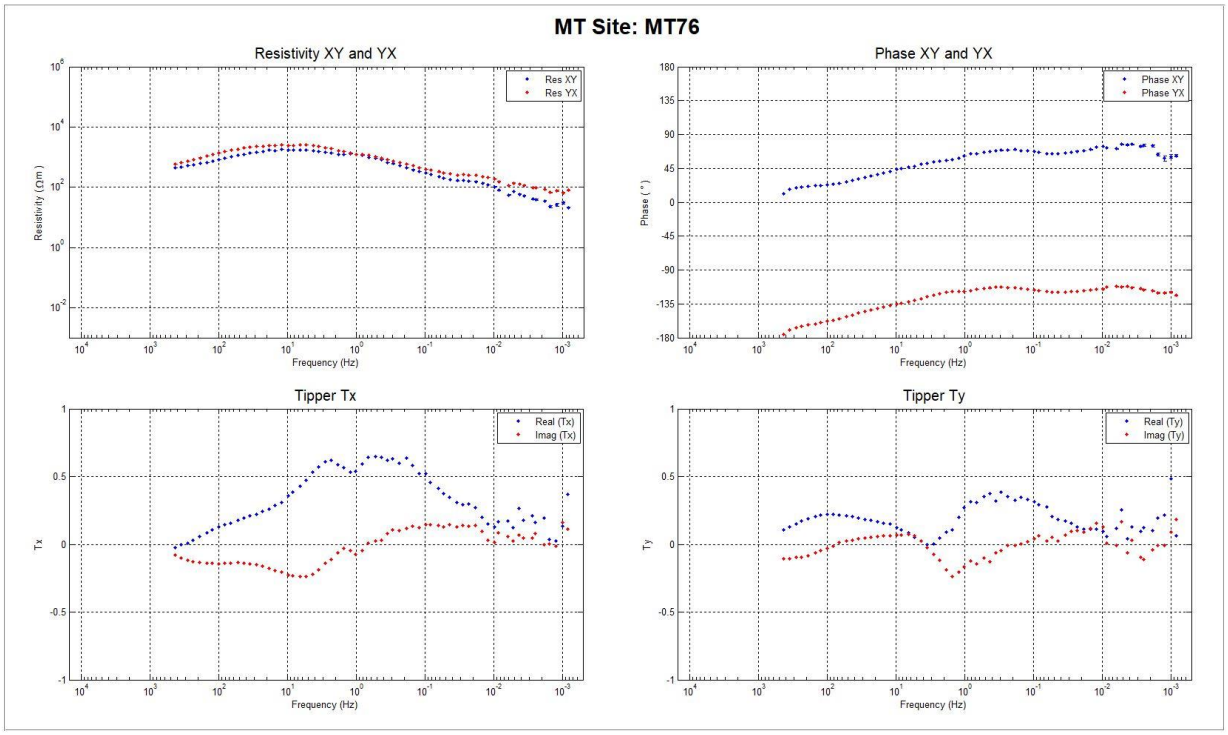

MT Site: MT64
Resistivity XY and YX
Res XY
Res YX
Resistivity (Ωm)
Frequency (Hz)
Phase XY and YX
Phase XY
Phase YX
Phase (°)
Frequency (Hz)
Tipper Tx
Real (Tx)
Imag (Tx)
Tx
Frequency (Hz)
Tipper Ty
Real (Ty)
Imag (Ty)
Ty
Frequency (Hz)

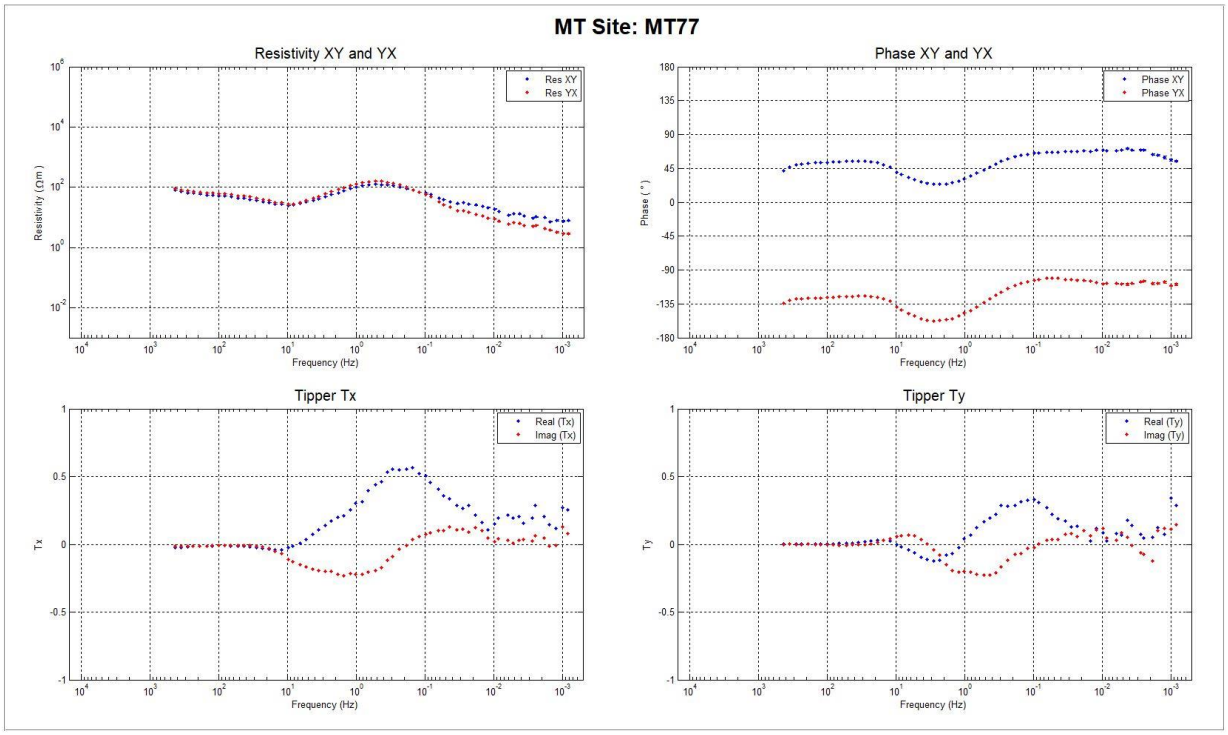

MT Site: MT65
Resistivity XY and YX
Res XY
Res YX
Resistivity (Ωm)
Frequency (Hz)
Phase XY and YX
Phase XY
Phase YX
Phase (°)
Frequency (Hz)
Tipper Tx
Real (Tx)
Imag (Tx)
Tx
Frequency (Hz)
Tipper Ty
Real (Ty)
Imag (Ty)
Ty
Frequency (Hz)

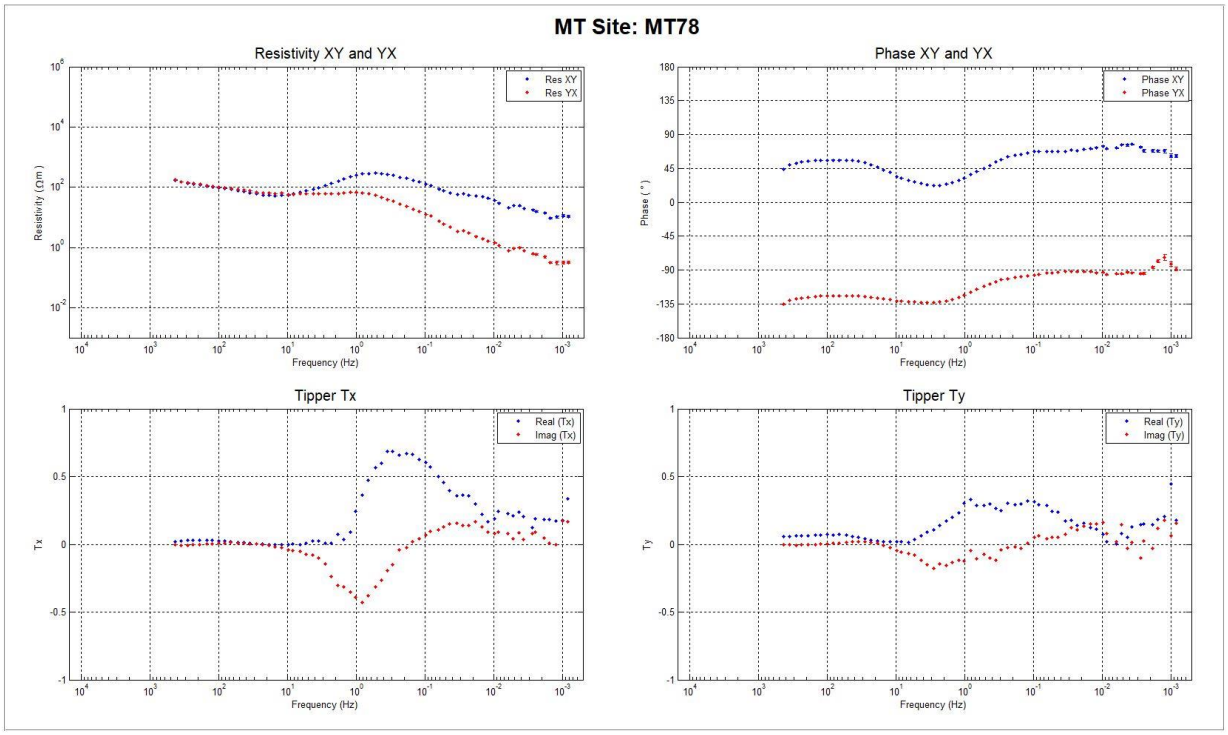

MT Site: MT71
Resistivity XY and YX
Res XY
Res YX
Resistivity (Ωm)
Frequency (Hz)
Phase XY and YX
Phase XY
Phase YX
Phase (°)
Frequency (Hz)
Tipper Tx
Real (Tx)
Imag (Tx)
Tx
Frequency (Hz)
Tipper Ty
Real (Ty)
Imag (Ty)
Ty
Frequency (Hz)

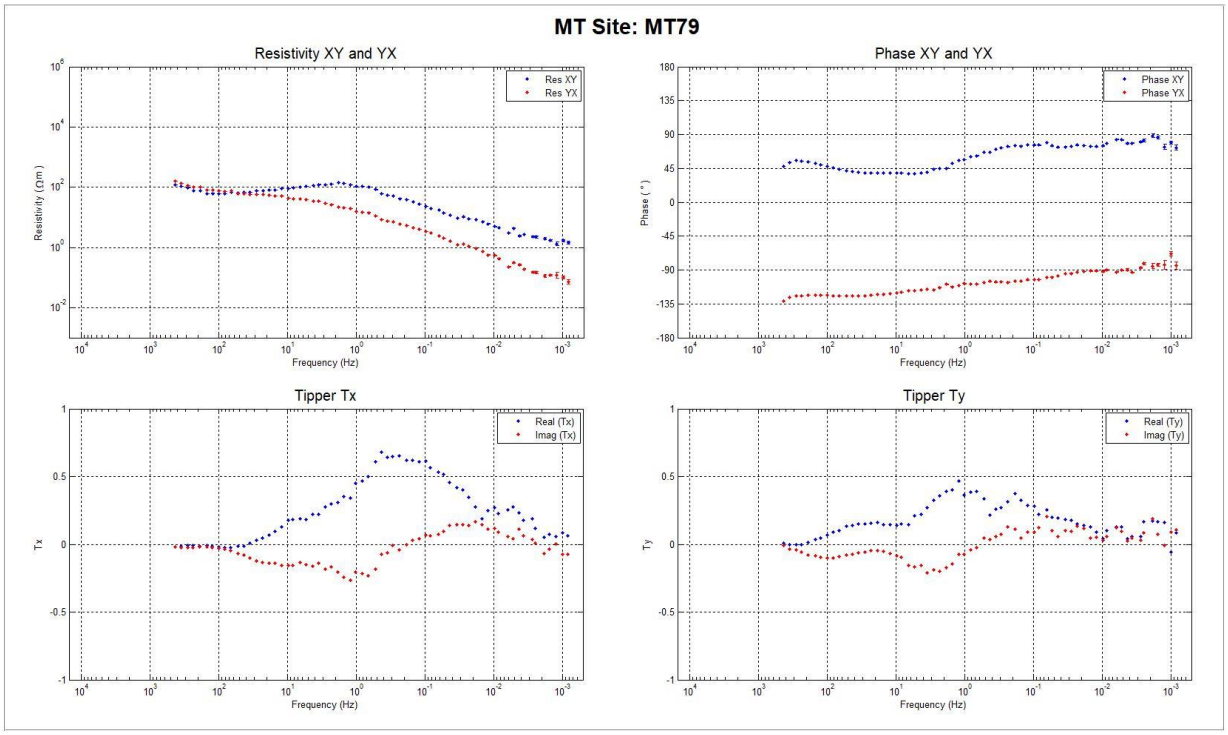

MT Site: MT74
Resistivity XY and YX
Res XY
Res YX
Resistivity (Ωm)
Frequency (Hz)
Phase XY and YX
Phase XY
Phase YX
Phase (°)
Frequency (Hz)
Tipper Tx
Real (Tx)
Imag (Tx)
Tx
Frequency (Hz)
Tipper Ty
Real (Ty)
Imag (Ty)
Ty
Frequency (Hz)

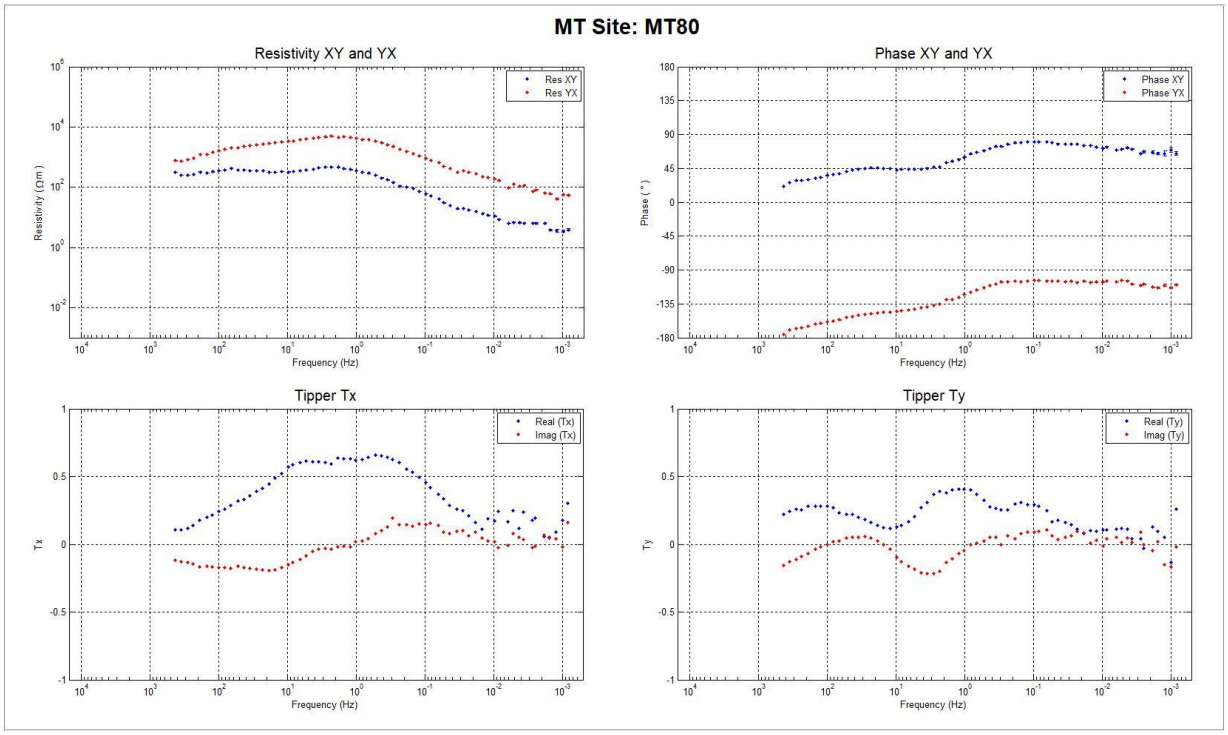

MT Site: MT75
Resistivity XY and YX
Res XY
Res YX
Resistivity (Ωm)
Frequency (Hz)
Phase XY and YX
Phase XY
Phase YX
Phase (°)
Frequency (Hz)
Tipper Tx
Real (Tx)
Imag (Tx)
Tx
Frequency (Hz)
Tipper Ty
Real (Ty)
Imag (Ty)
Ty
Frequency (Hz)

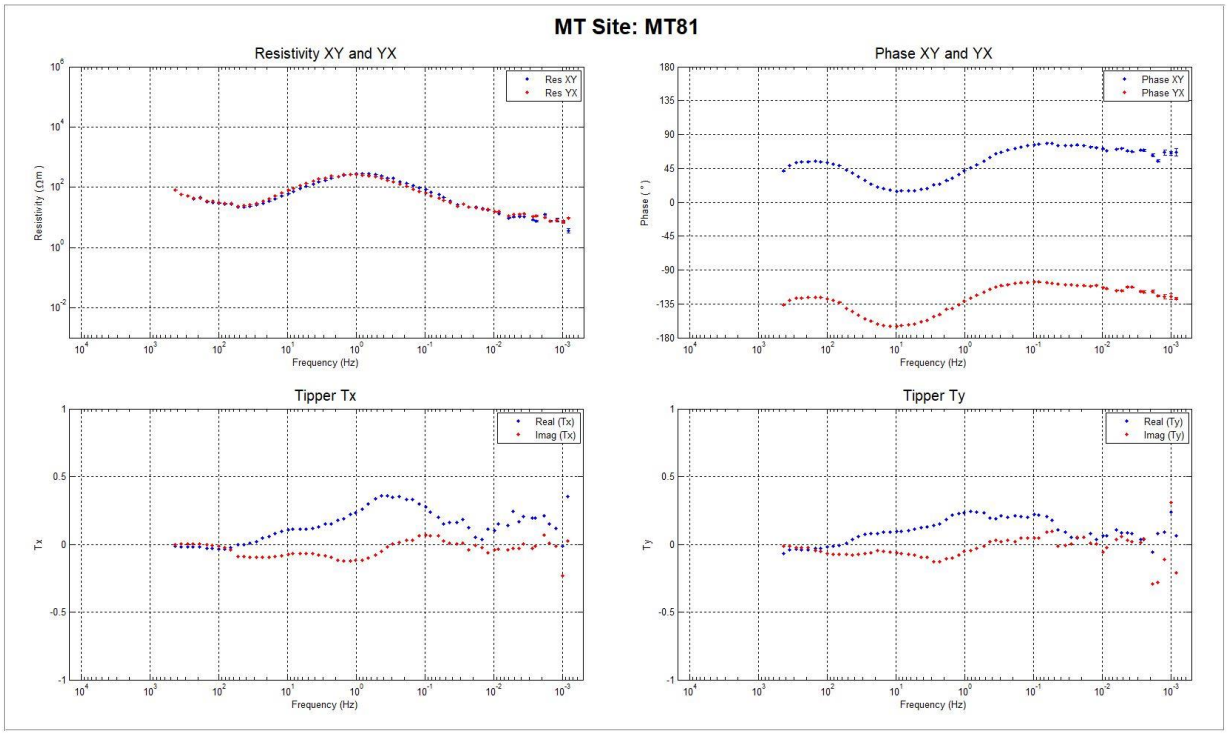

MT Site: MT76
Resistivity XY and YX
Res XY
Res YX
Resistivity (Ωm)
Frequency (Hz)
Phase XY and YX
Phase XY
Phase YX
Phase (°)
Frequency (Hz)
Tipper Tx
Real (Tx)
Imag (Tx)
Tx
Frequency (Hz)
Tipper Ty
Real (Ty)
Imag (Ty)
Ty
Frequency (Hz)

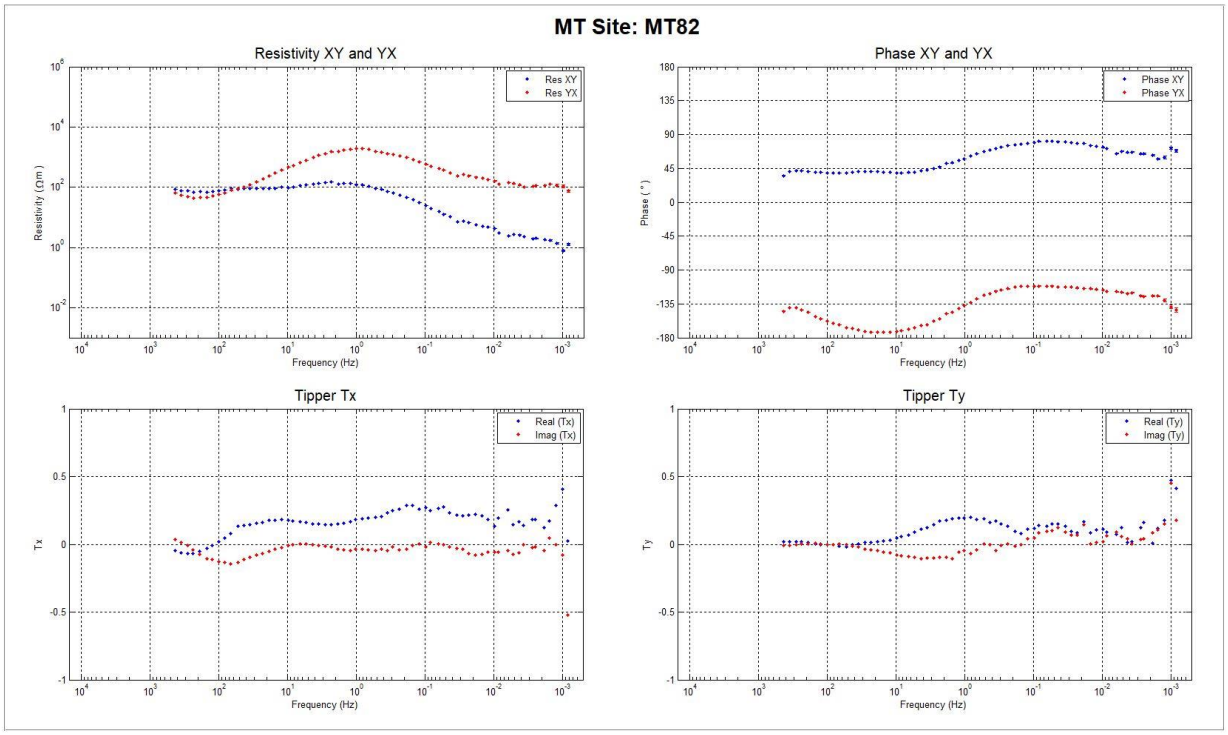

MT Site: MT77
Resistivity XY and YX
Res XY
Res YX
Resistivity (Ωm)
Frequency (Hz)
Phase XY and YX
Phase XY
Phase YX
Phase (°)
Frequency (Hz)
Tipper Tx
Real (Tx)
Imag (Tx)
Tx
Frequency (Hz)
Tipper Ty
Real (Ty)
Imag (Ty)
Ty
Frequency (Hz)

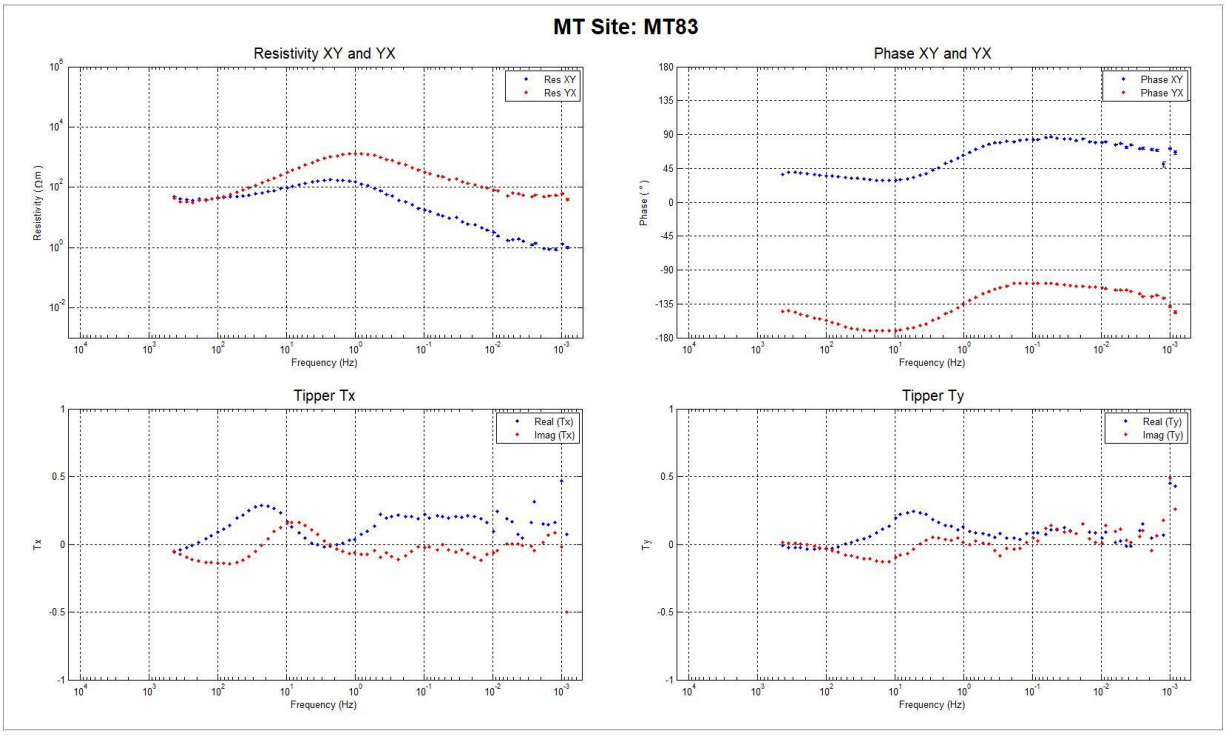

MT Site: MT78
Resistivity XY and YX
Res XY
Res YX
Resistivity (Ωm)
Frequency (Hz)
Phase XY and YX
Phase XY
Phase YX
Phase (°)
Frequency (Hz)
Tipper Tx
Real (Tx)
Imag (Tx)
Tx
Frequency (Hz)
Tipper Ty
Real (Ty)
Imag (Ty)
Ty
Frequency (Hz)


MT Site: MT79
Resistivity XY and YX
Res XY
Res YX
Resistivity (Ωm)
Frequency (Hz)
Phase XY and YX
Phase XY
Phase YX
Phase (°)
Frequency (Hz)
Tipper Tx
Real (Tx)
Imag (Tx)
Tx
Frequency (Hz)
Tipper Ty
Real (Ty)
Imag (Ty)
Ty
Frequency (Hz)


MT Site: MT80
Resistivity XY and YX
Res XY
Res YX
Resistivity (Ωm)
Frequency (Hz)
Phase XY and YX
Phase XY
Phase YX
Phase (°)
Frequency (Hz)
Tipper Tx
Real (Tx)
Imag (Tx)
Tx
Frequency (Hz)
Tipper Ty
Real (Ty)
Imag (Ty)
Ty
Frequency (Hz)


MT Site: MT81
Resistivity XY and YX
Res XY
Res YX
Resistivity (Ωm)
Frequency (Hz)
Phase XY and YX
Phase XY
Phase YX
Phase (°)
Frequency (Hz)
Tipper Tx
Real (Tx)
Imag (Tx)
Tx
Frequency (Hz)
Tipper Ty
Real (Ty)
Imag (Ty)
Ty
Frequency (Hz)


MT Site: MT82
Resistivity XY and YX
Res XY
Res YX
Resistivity (Ωm)
Frequency (Hz)
Phase XY and YX
Phase XY
Phase YX
Phase (°)
Frequency (Hz)
Tipper Tx
Real (Tx)
Imag (Tx)
Tx
Frequency (Hz)
Tipper Ty
Real (Ty)
Imag (Ty)
Ty
Frequency (Hz)


MT Site: MT83
Resistivity XY and YX
Res XY
Res YX
Resistivity (Ωm)
Frequency (Hz)
Phase XY and YX
Phase XY
Phase YX
Phase (°)
Frequency (Hz)
Tipper Tx
Real (Tx)
Imag (Tx)
Tx
Frequency (Hz)
Tipper Ty
Real (Ty)
Imag (Ty)
Ty
Frequency (Hz)

APPENDIX E. PARALLEL SENSOR TEST

E.1. GENERAL INFORMATION

Project:	CA01281S
Date:	October 10, 2021
Prepared by:	Sam Edwards
Field Staff:	Andrew Casson Rodney Renaud Jordan Sampson Rajan Naran Alex Marino Jordan Reelis
QuickLay version:	ver.5.7.8
Common folder:	ver.2.313 (released: 2021/10/01)
Datum and Projection:	WGS 84 / UTM Zone 7 North
Site Location (UTM):	585559E / 6819393N
Coil Orientation:	90° True
Magnetic Declination:	18° East

E.2. SUMMARY OF COILS TESTED AND RESULTS

Serial ID	Test Passed (ID)	Notes
P-50-		
3005	LF1	
3006	LF1	
3007	LF1	
3092	None	Excluded from project.
3093	LF1	
3100	LF1	
3102	LF1	
3111	LF1	
3113	LF1	
3116	LF1	
3117	LF1	
3125	LF2	
3128	LF1	
3131	LF1	
P80-		
7006	LF1	
7071	LF1	
7123	LF1	
7153	LF1	
7163	LF1	
7169	LF1	
7185	LF1	
BF6-		
0112	HF1	
0302	HF1	
0710	HF1	
GHF-		

Serial ID	Test Passed (ID)	Notes
1083	HF1	
1125	HF1	
1142	HF1	
1454	HF1	
1456	HF1	
1457	HF1	
1458	HF1	
1462	HF1	
1463	HF1	
1465	HF1	
1467	HF1	

E.2.1. Photo(s) of the PST layout

E.2.2. PST conditions (culture, noise, etc.)

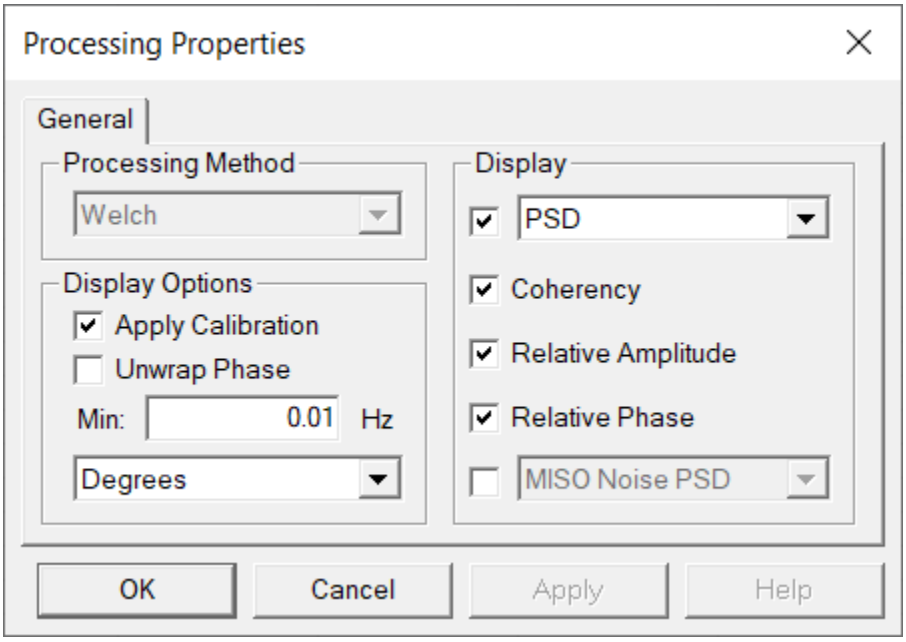
Very quiet area just off a mine road (shut for the season – no traffic). Near large gravel pile.

E.2.3. Comment on test results

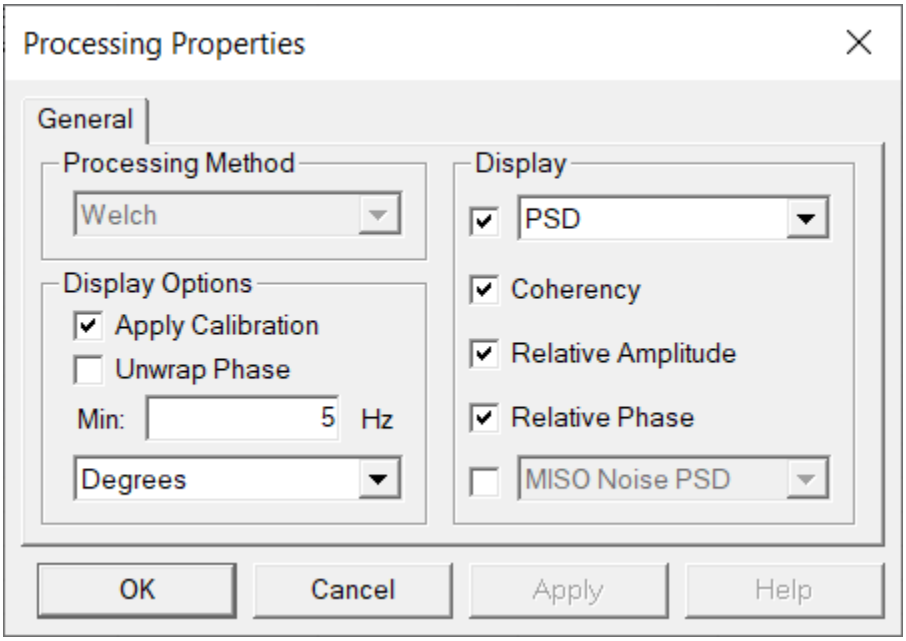
Test ID	Notes
Test LF1	All coils look fine except 3092. 3125 had negative polarity due to coil cable but was looked okay.
Test LF2	Retest for 3092 and 3125. 3092 improved but still had lower coherency and the PSD was slightly off.
Test HF1	All coils okay.

E.3. PST PROCESSING PARAMETERS

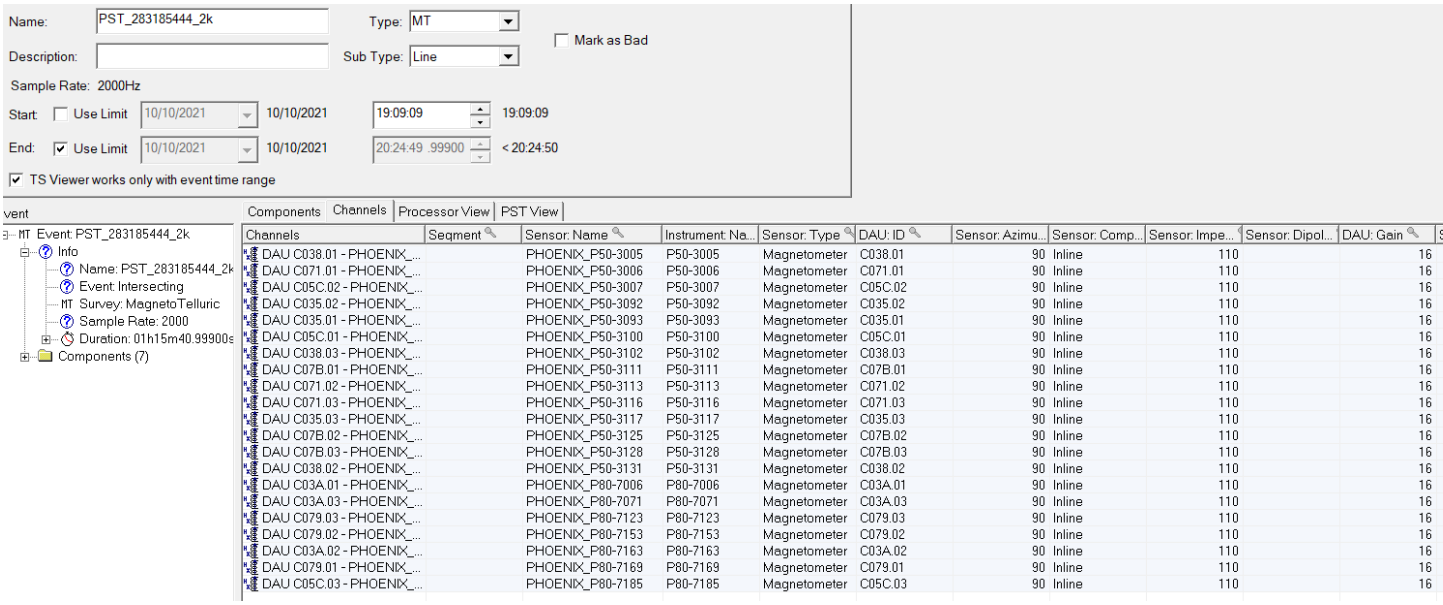
For Low Frequency (LF)



For High Frequency (HF)



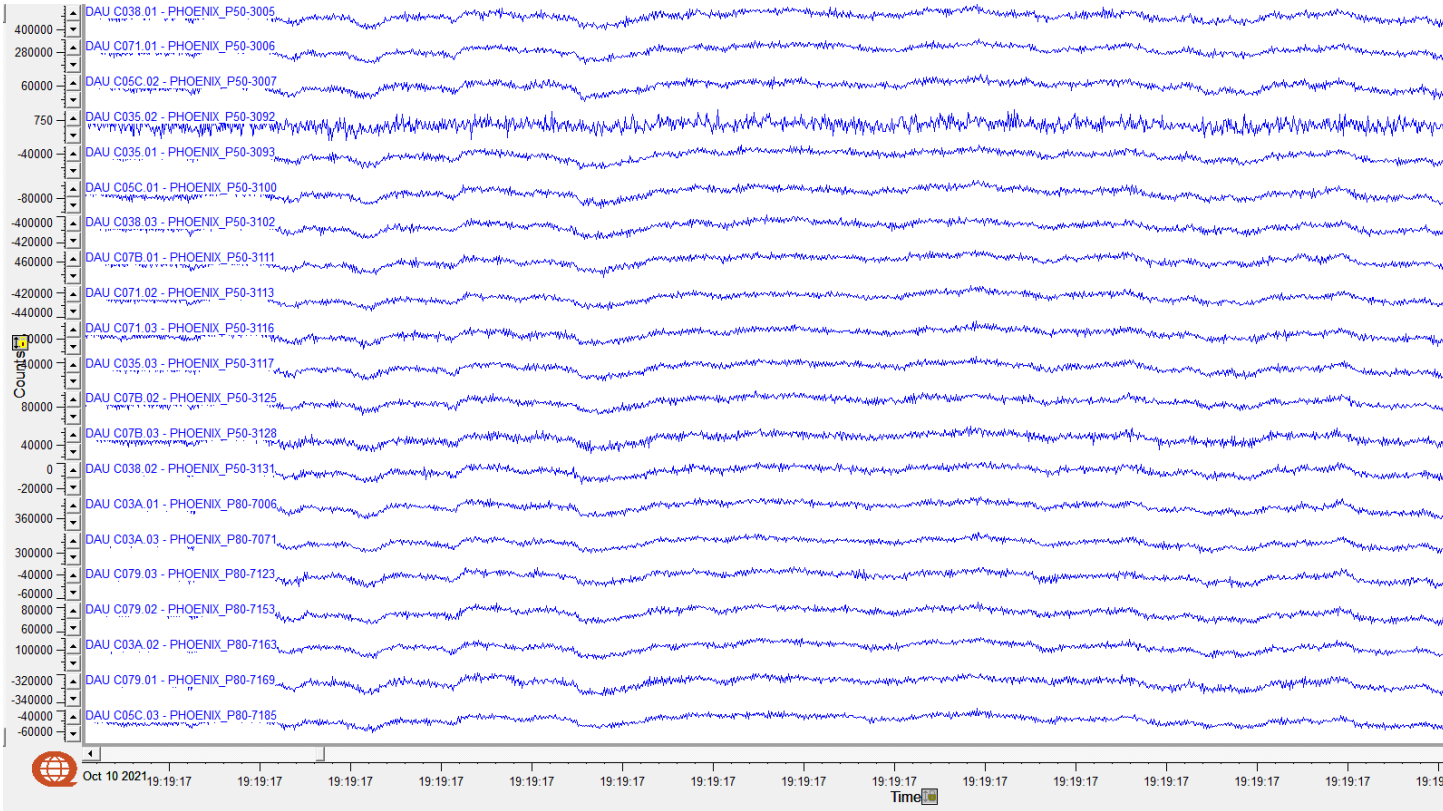
E.4. TEST LF 1 RESULTS

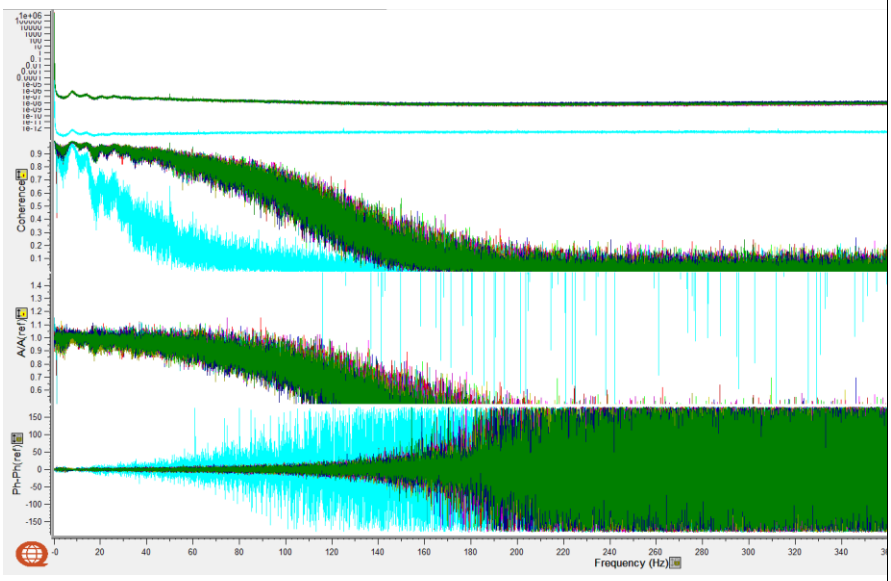
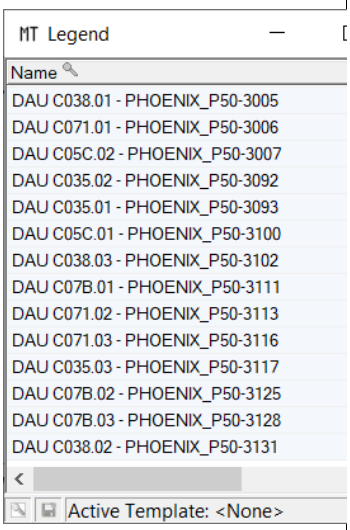


Channels	Segment	Sensor: Name	Instrument: Na...	Sensor: Type	DAU: ID	Sensor: Azimu...	Sensor: Comp...	Sensor: Impe...	Sensor: Dipol...	DAU: Gain
DAU C038.01 - PHOENIX_...		PHOENIX_P50-3005	P50-3005	Magnetometer	C038.01	90	Inline	110		16
DAU C071.01 - PHOENIX_...		PHOENIX_P50-3006	P50-3006	Magnetometer	C071.01	90	Inline	110		16
DAU C05C.02 - PHOENIX_...		PHOENIX_P50-3007	P50-3007	Magnetometer	C05C.02	90	Inline	110		16
DAU C035.02 - PHOENIX_...		PHOENIX_P50-3092	P50-3092	Magnetometer	C035.02	90	Inline	110		16
DAU C035.01 - PHOENIX_...		PHOENIX_P50-3093	P50-3093	Magnetometer	C035.01	90	Inline	110		16
DAU C05C.01 - PHOENIX_...		PHOENIX_P50-3100	P50-3100	Magnetometer	C05C.01	90	Inline	110		16
DAU C038.03 - PHOENIX_...		PHOENIX_P50-3102	P50-3102	Magnetometer	C038.03	90	Inline	110		16
DAU C07B.01 - PHOENIX_...		PHOENIX_P50-3111	P50-3111	Magnetometer	C07B.01	90	Inline	110		16
DAU C071.02 - PHOENIX_...		PHOENIX_P50-3113	P50-3113	Magnetometer	C071.02	90	Inline	110		16
DAU C071.03 - PHOENIX_...		PHOENIX_P50-3116	P50-3116	Magnetometer	C071.03	90	Inline	110		16
DAU C035.03 - PHOENIX_...		PHOENIX_P50-3117	P50-3117	Magnetometer	C035.03	90	Inline	110		16
DAU C07B.02 - PHOENIX_...		PHOENIX_P50-3125	P50-3125	Magnetometer	C07B.02	90	Inline	110		16
DAU C07B.03 - PHOENIX_...		PHOENIX_P50-3128	P50-3128	Magnetometer	C07B.03	90	Inline	110		16
DAU C038.02 - PHOENIX_...		PHOENIX_P50-3131	P50-3131	Magnetometer	C038.02	90	Inline	110		16
DAU C03A.01 - PHOENIX_...		PHOENIX_P80-7006	P80-7006	Magnetometer	C03A.01	90	Inline	110		16
DAU C03A.03 - PHOENIX_...		PHOENIX_P80-7071	P80-7071	Magnetometer	C03A.03	90	Inline	110		16
DAU C079.03 - PHOENIX_...		PHOENIX_P80-7123	P80-7123	Magnetometer	C079.03	90	Inline	110		16
DAU C079.02 - PHOENIX_...		PHOENIX_P80-7153	P80-7153	Magnetometer	C079.02	90	Inline	110		16
DAU C03A.02 - PHOENIX_...		PHOENIX_P80-7163	P80-7163	Magnetometer	C03A.02	90	Inline	110		16
DAU C079.01 - PHOENIX_...		PHOENIX_P80-7169	P80-7169	Magnetometer	C079.01	90	Inline	110		16
DAU C05C.03 - PHOENIX_...		PHOENIX_P80-7185	P80-7185	Magnetometer	C05C.03	90	Inline	110		16

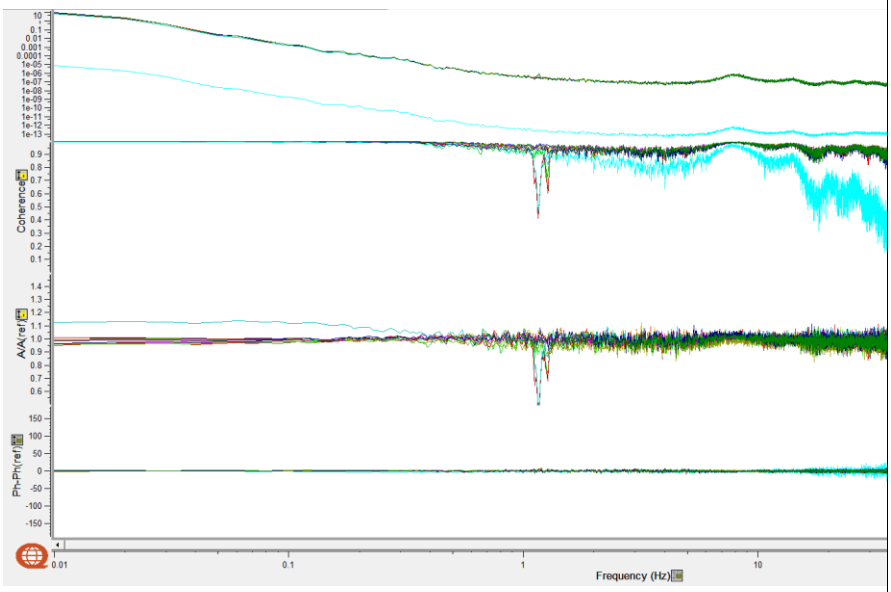
Notes: coil 3125 had negative polarity due to coil cable – retested in LF2. Coil 3092 Had very low PSD compared to other coils – retested in LF2.

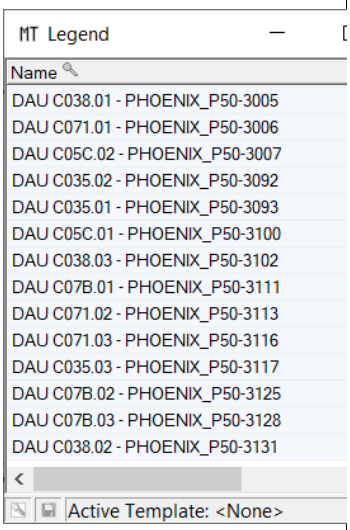
Time Series @2000 samples per second

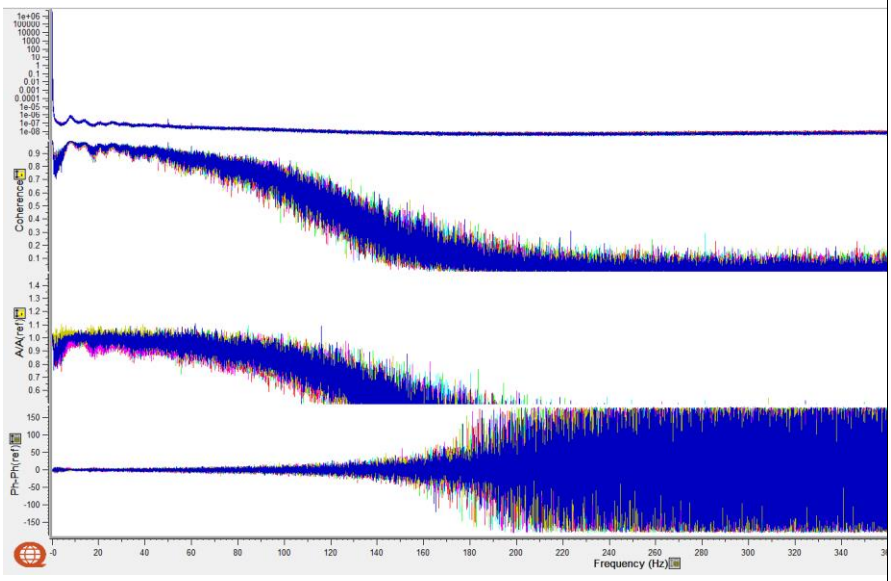
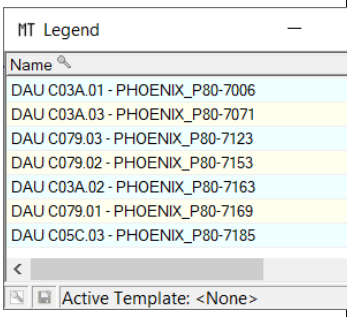


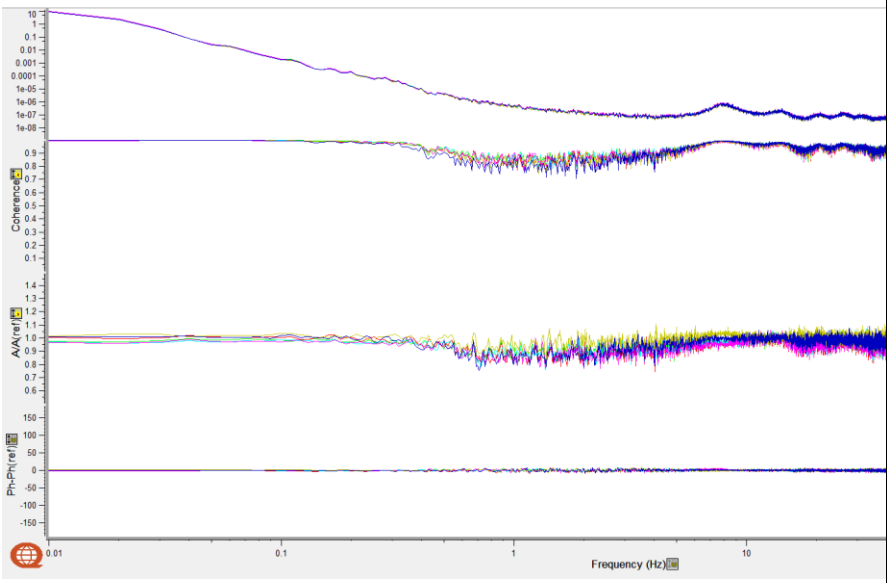
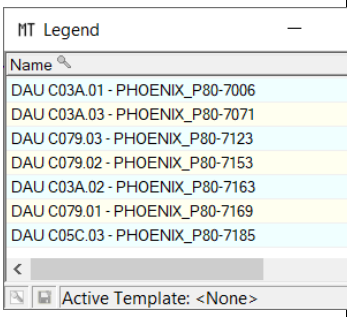
Power Spectral Density (PSD) of channels (strip 1); **Coherency** (strip 2) and **Response Function** (strips 3 and 4; Amplitude and Phase) – *Linear frequency scale* –	**Test LF 1 P50s Sampling @ 2000 samples/s**
	

Power Spectral Density (PSD) of channels (strip 1); **Coherency** (strip 2) and **Response Function** (strips 3 and 4; Amplitude and Phase) – *Logarithmic frequency scale* –	**Test LF 1 P50s Sampling @ 2000 samples/s**

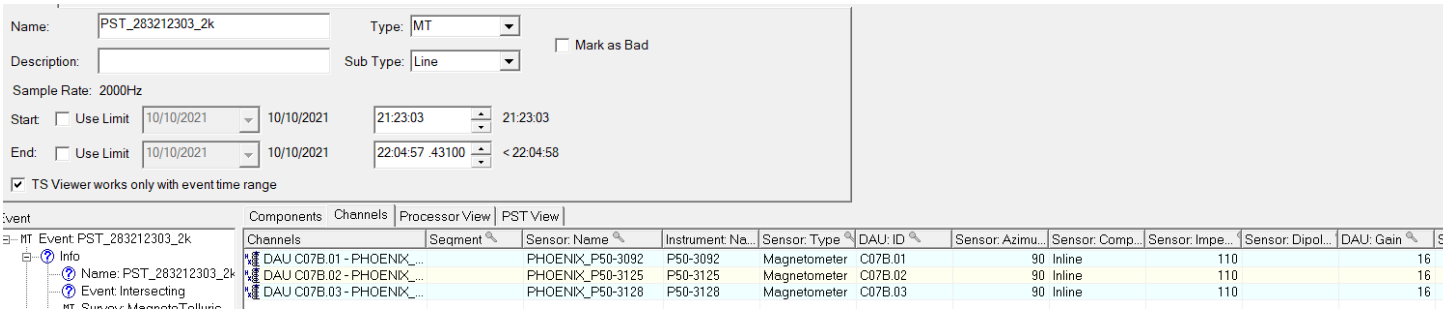




Power Spectral Density (PSD) of channels (strip 1); **Coherency** (strip 2) and **Response Function** (strips 3 and 4; Amplitude and Phase) – *Linear frequency scale* –	**Test LF 1 P80s Sampling @ 2000 samples/s**
	

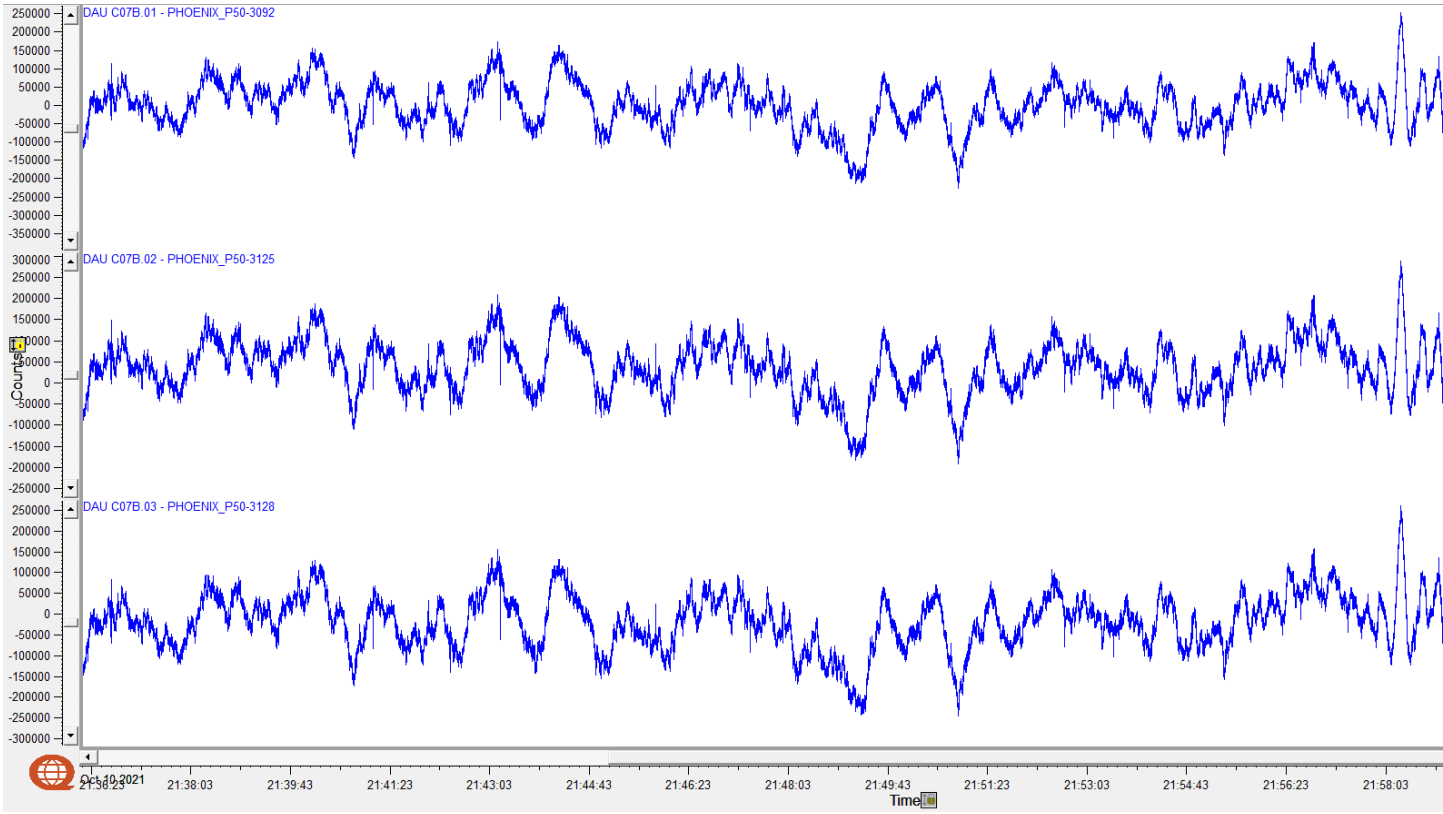
Power Spectral Density (PSD) of channels (strip 1); **Coherency** (strip 2) and **Response Function** (strips 3 and 4; Amplitude and Phase) – *Logarithmic frequency scale* –	**Test LF 1 P80s Sampling @ 2000 samples/s**
	

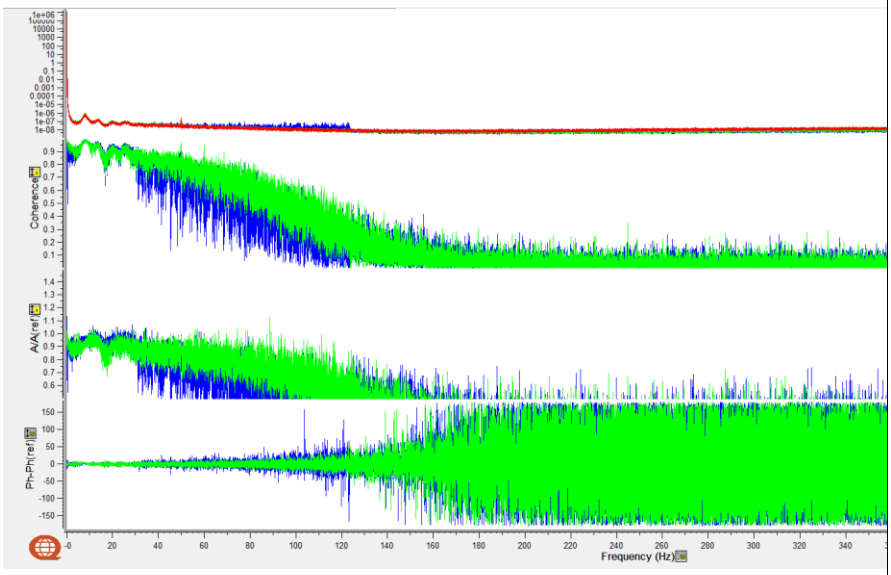
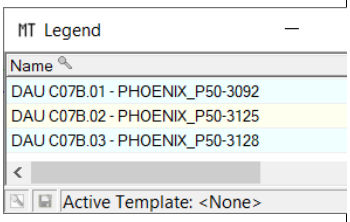
E.5. TEST LF 2 RESULTS

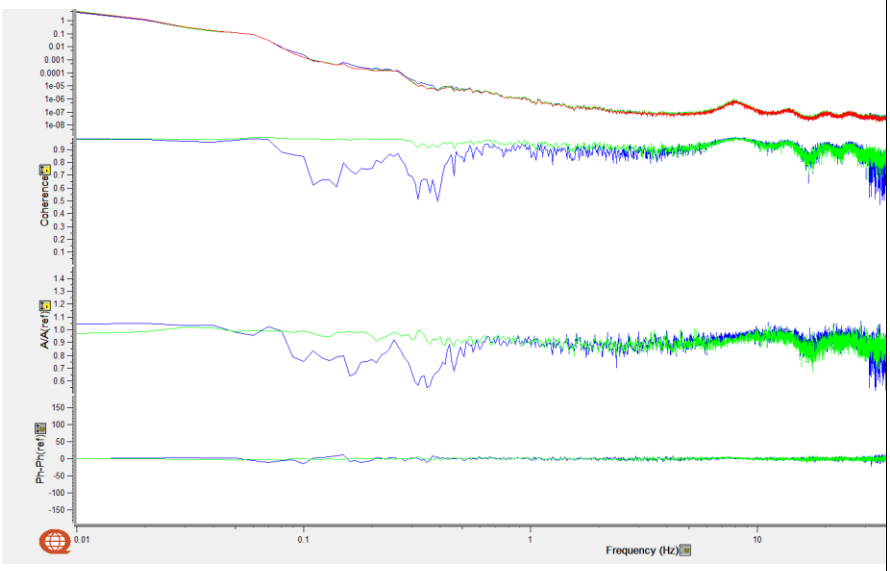
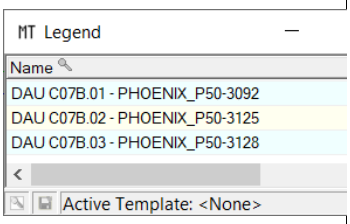


Notes: 3125 all okay. 3092 improved compared to LF1 but still has slightly odd PSD (with jump at 120Hz) and lower coherency than other coils.

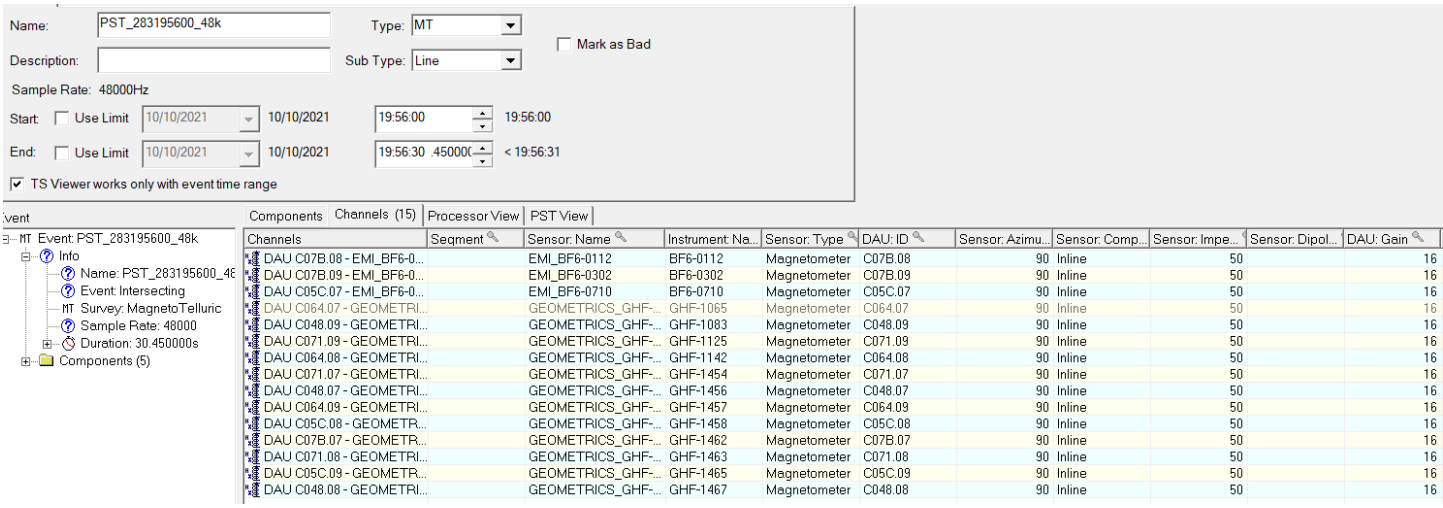
Time Series @2000 samples per second


DAU C07B.01 - PHOENIX_P50-3092
DAU C07B.02 - PHOENIX_P50-3125
DAU C07B.03 - PHOENIX_P50-3128
Counts
Oct 10 2021
21:36:23
21:38:03
21:39:43
21:41:23
21:43:03
21:44:43
21:46:23
21:48:03
21:49:43
21:51:23
21:53:03
21:54:43
21:56:23
21:58:03
Time

Power Spectral Density (PSD) of channels (strip 1); **Coherency** (strip 2) and **Response Function** (strips 3 and 4; Amplitude and Phase) – *Linear frequency scale* –	**Test LF 2 Sampling @ 2000 samples/s**
	

Power Spectral Density (PSD) of channels (strip 1); **Coherency** (strip 2) and **Response Function** (strips 3 and 4; Amplitude and Phase) – *Logarithmic frequency scale* –	**Test LF 2 Sampling @ 2000 samples/s**
	

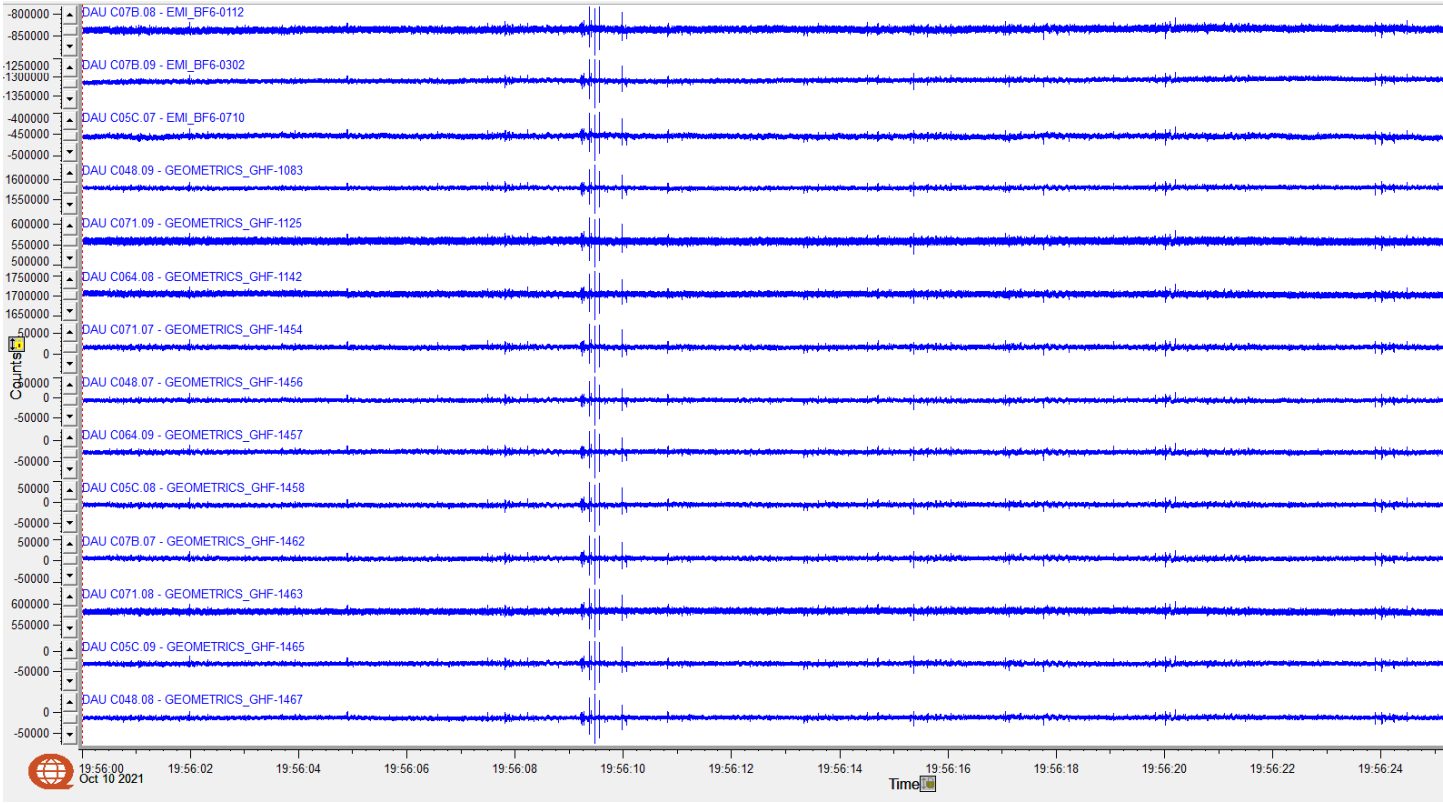
E.6. TEST HF 1 RESULTS

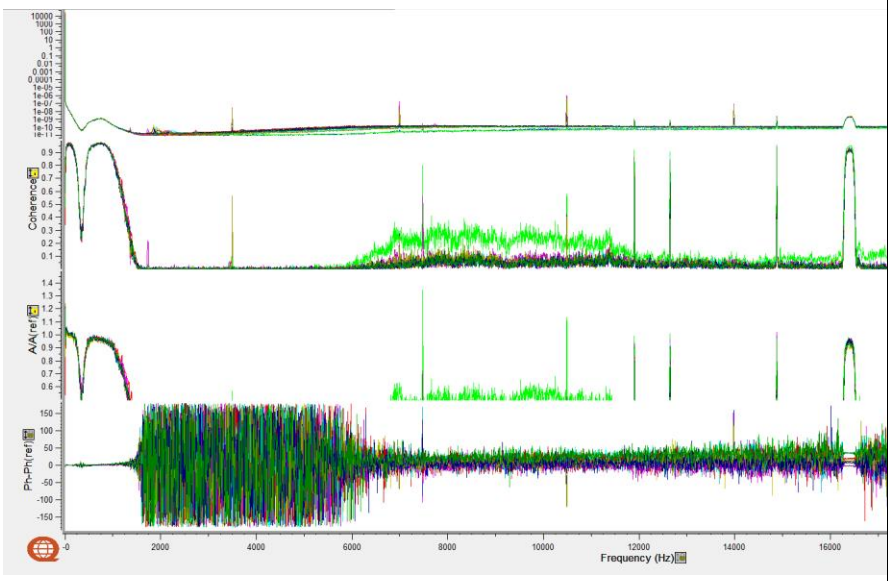
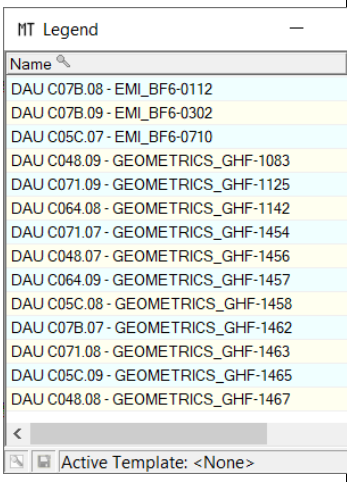


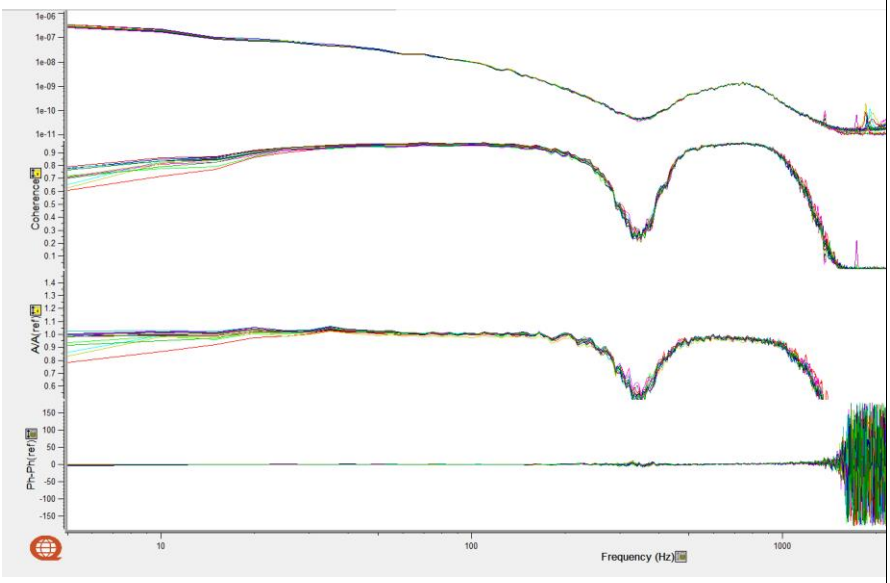
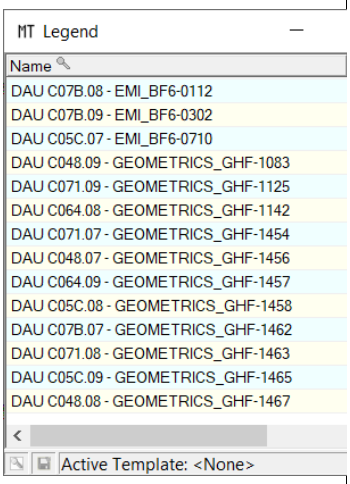
Channels	Segment	Sensor: Name	Instrument: Na...	Sensor: Type	DAU: ID	Sensor: Azimu...	Sensor: Comp...	Sensor: Impe...	Sensor: Dipol...	DAU: Gain
DAU C07B.08 - EMI_BF6-0...		EMI_BF6-0112	BF6-0112	Magnetometer	C07B.08	90	Inline	50		16
DAU C07B.09 - EMI_BF6-0...		EMI_BF6-0302	BF6-0302	Magnetometer	C07B.09	90	Inline	50		16
DAU C05C.07 - EMI_BF6-0...		EMI_BF6-0710	BF6-0710	Magnetometer	C05C.07	90	Inline	50		16
DAU C064.07 - GEOMETRI...		GEOMETRICS_GHF-...	GHF-1065	Magnetometer	C064.07	90	Inline	50		16
DAU C048.09 - GEOMETRI...		GEOMETRICS_GHF-...	GHF-1083	Magnetometer	C048.09	90	Inline	50		16
DAU C071.09 - GEOMETRI...		GEOMETRICS_GHF-...	GHF-1125	Magnetometer	C071.09	90	Inline	50		16
DAU C064.08 - GEOMETRI...		GEOMETRICS_GHF-...	GHF-1142	Magnetometer	C064.08	90	Inline	50		16
DAU C071.07 - GEOMETRI...		GEOMETRICS_GHF-...	GHF-1454	Magnetometer	C071.07	90	Inline	50		16
DAU C048.07 - GEOMETRI...		GEOMETRICS_GHF-...	GHF-1456	Magnetometer	C048.07	90	Inline	50		16
DAU C064.09 - GEOMETRI...		GEOMETRICS_GHF-...	GHF-1457	Magnetometer	C064.09	90	Inline	50		16
DAU C05C.08 - GEOMETR...		GEOMETRICS_GHF-...	GHF-1458	Magnetometer	C05C.08	90	Inline	50		16
DAU C07B.07 - GEOMETR...		GEOMETRICS_GHF-...	GHF-1462	Magnetometer	C07B.07	90	Inline	50		16
DAU C071.08 - GEOMETRI...		GEOMETRICS_GHF-...	GHF-1463	Magnetometer	C071.08	90	Inline	50		16
DAU C05C.09 - GEOMETR...		GEOMETRICS_GHF-...	GHF-1465	Magnetometer	C05C.09	90	Inline	50		16
DAU C048.08 - GEOMETRI...		GEOMETRICS_GHF-...	GHF-1467	Magnetometer	C048.08	90	Inline	50		16

Notes: All passed coils okay. 0302 and 0710 weak and to be watched.

Time Series @48k samples per second



Power Spectral Density (PSD) of channels (strip 1); **Coherency** (strip 2) and **Response Function** (strips 3 and 4; Amplitude and Phase) – *Linear frequency scale* –	**Test HF 1** **Sampling @ 48k samples/s**
	

Power Spectral Density (PSD) of channels (strip 1); **Coherency** (strip 2) and **Response Function** (strips 3 and 4; Amplitude and Phase) – *Logarithmic frequency scale* –	**Test HF 1** **Sampling @ 48k samples/s**
	

APPENDIX F. MT REMOTE TEST

F.1. GENERAL INFORMATION

Project: CA01281S

Date: October 11, 2021

Prepared by: Sam Edwards

QuickLay version: ver.5.7.8

Common folder: ver.2.313 (released: 2021/10/01)

Datum and Projection: WGS 84 / UTM Zone 7 North

Site Location (UTM): 585380E / 6819363N

Magnetic Declination: 18^{o} E

Sensor Information: see table below.

Channel	Azimuth	Length	Channel	Azimuth
Ex	180° South	100 m	**Hx**	00° North
Ey	90° East	100 m	**Hy**	90° East

LF:

Channels	Instrument: Name	Sensor: Name	Sensor: Dipole Le...	Sensor: Impedance	Sensor: Azimuth	Sensor: Component	Sensor: Polarity
DAU C071.01 - REMOTE_Hx	P50-3102	REMOTE_Hx		110	0	Inline	Positive
DAU C071.02 - REMOTE_Hy	P50-3117	REMOTE_Hy		110	90	Crossline	Positive
DAU C071.04 - REMOTE_Ex	GL	REMOTE_Ex	100m	4500	180	Inline	Positive
DAU C071.05 - REMOTE_Ey	GL	REMOTE_Ey	100m	14400	90	Crossline	Positive

HF:

Channels	Instrument: Name	Sensor: Name	Sensor: Dipole Le...	Sensor: Impedance	Sensor: Azimuth	Sensor: Component	Sensor: Polarity
DAU C071.07 - REMOTE_Hx	BF6-0710	REMOTE_Hx		50	0	Inline	Positive
DAU C071.08 - REMOTE_Hy	GHF-1457	REMOTE_Hy		50	90	Crossline	Positive
DAU C071.10 - REMOTE_Ex	GL	REMOTE_Ex	100m	4500	180	Inline	Positive
DAU C071.11 - REMOTE_Ey	GL	REMOTE_Ey	100m	14400	90	Crossline	Positive

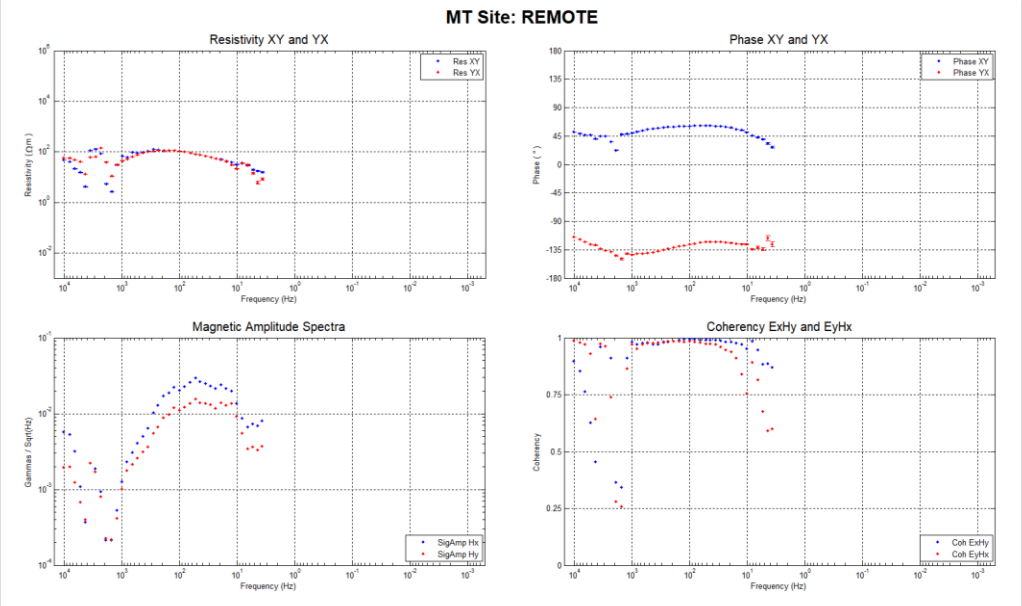
Test conditions: Local and East plate for the E's buried in sandy gravel. South plate in forest soil.

F.2. SOUNDING CURVES

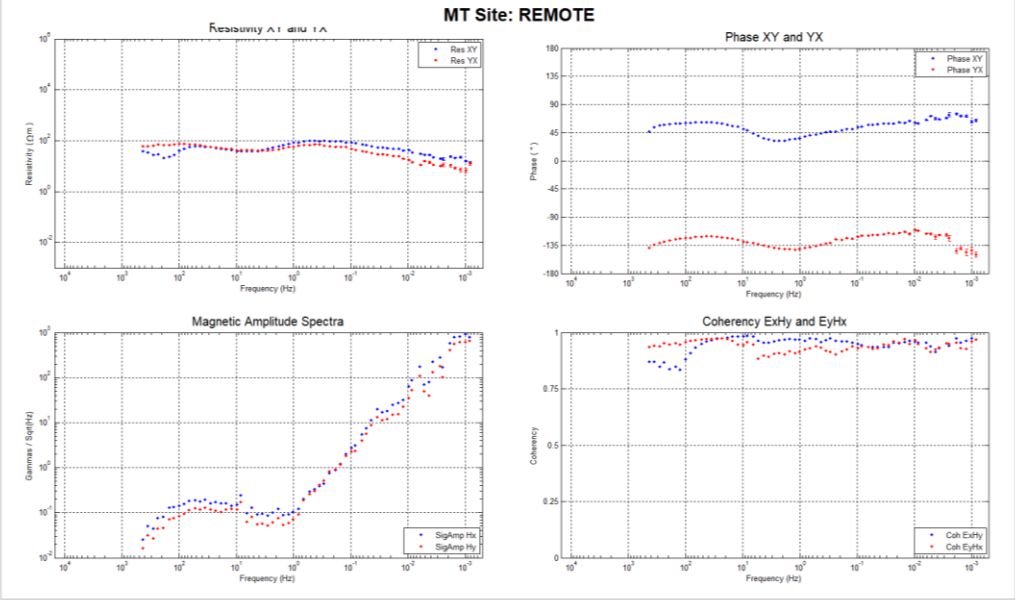
Apparent resistivity, phase, magnetic signal amplitude and off-diagonal coherences of the MT remote, data processed unreferenced.

Comments: All looks normal.

AMT (48k & 12k sps)



MT (2k & 40 sps)

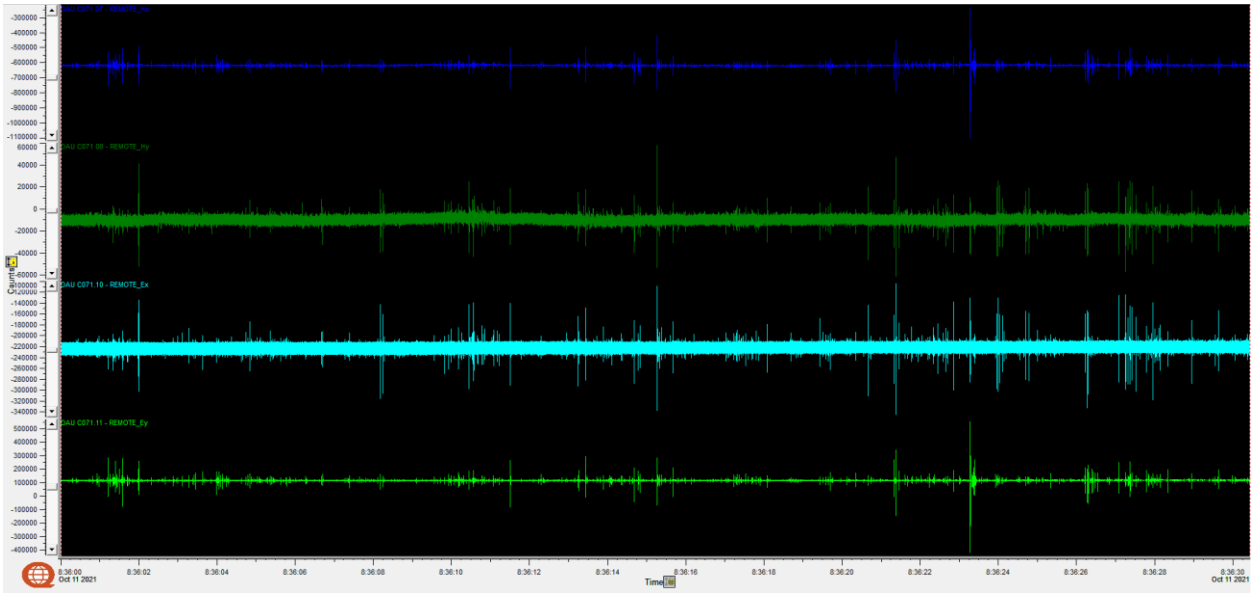


F.3. EVENTS ACQUIRED AND USED IN PROCESSING

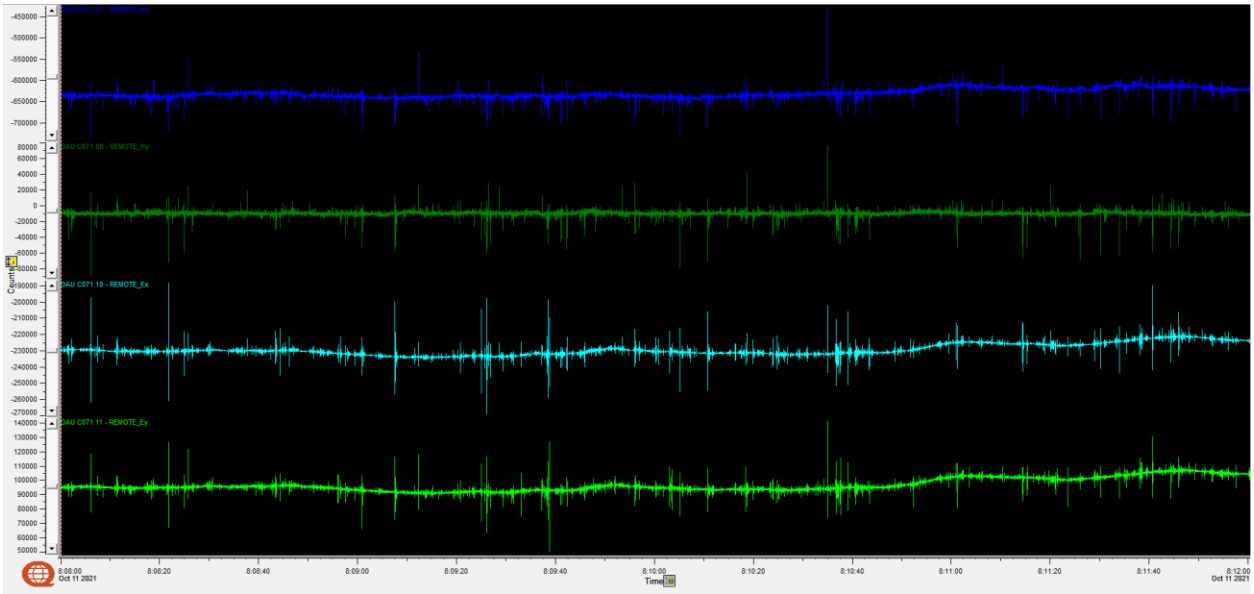
Sample rate	Net Events	TS Length	Observation
48,000 sps	REMOTE_2840816_48k REMOTE_2840856_48k REMOTE_2840836_48k	30 seconds each	
12,000 sps	REMOTE_2840800_12k REMOTE_2840808_12k REMOTE_2840848_12k REMOTE_2840820_12k REMOTE_2840828_12k REMOTE_2840840_12k	4 minutes each	
2,000 sps	REMOTE_2840400_2k REMOTE_2840500_2k REMOTE_2840600_2k REMOTE_2840300_2k REMOTE_2840200_2k REMOTE_2840800_2k REMOTE_2840100_2k REMOTE_2841600_2k REMOTE_2832214_2k REMOTE_2840000_2k REMOTE_2841500_2k REMOTE_2832300_2k REMOTE_2840700_2k REMOTE_2841400_2k REMOTE_2840900_2k REMOTE_2841000_2k REMOTE_2841100_2k REMOTE_2841200_2k REMOTE_2841300_2k REMOTE_2841700_2k	18 hours 37 minutes	Hy shows several spikes with decaying tails throughout the time series. Strong tellurics during the night seen in LF data (Ap index: 12).
40 sps			Resampled from 2k data.

F.4. SCREEN CAPTURE OF TIME SERIES

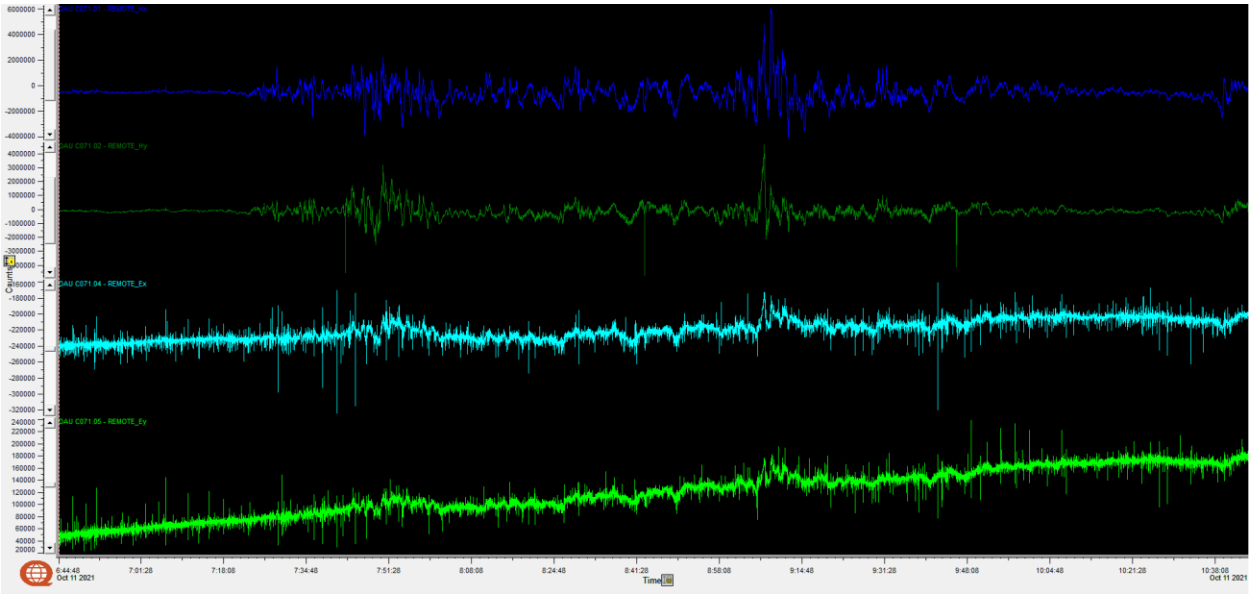
Time Series: @48,000 samples per second



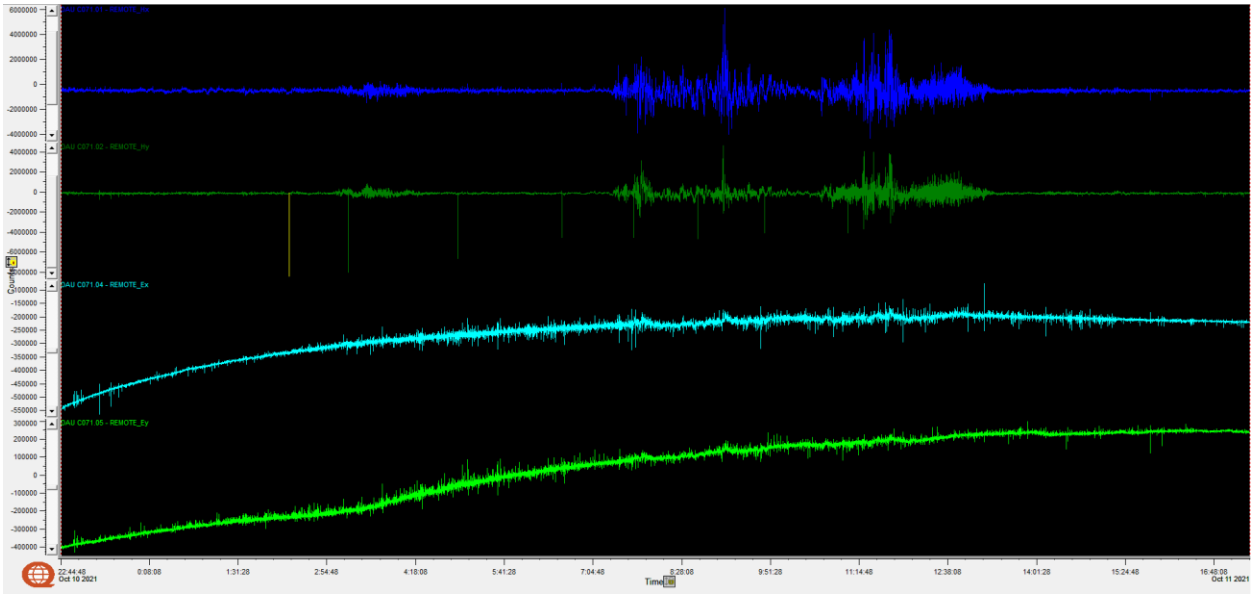
Time Series: @ 12,000 samples per second



Time Series: @1,000 samples per second



Time Series: @40 samples per second



APPENDIX G. INSTRUMENT SPECIFICATIONS

G.1. REF TEK – 160 QUANTEC DATA ACQUISITION SYSTEM

Refraction Technology Inc. – Plano, Texas

Specification	Description
Mechanical – DAS	
Size:	130mm high x 240mm wide x 400mm long
Weight:	16 lbs
Shock:	Survives a 1 meter drop on any axis
Operating Temperature:	-20°C to +60°C
Connectors	
Channel Input:	PTO7A14-19S (2 each for 6-Channel DAS)
Power:	PTO7A12-4S
GPS Antenna:	standard
Power	
Input Voltage:	10 to 15 VDC
Average Power:	~6 W (5-6 channel)
	~8 W (10-12 channel)
A/D Converter	
Type:	Δ–Σ modulation, 256 KHz base rate, 24-bit output resolution
Channels:	12 (6 @ LS and 6 @ HS)
Input Impedance:	100 Mohm

Sensor Input Signal Range:

Gain	Input Full Scale (volts)	Bit Weight	
		Actual	Reported
1	± 32 V	3.81 µV	
2	± 16 V		
4	± 8 V	954 nV	
8	± 4 V		
16	± 2 V	238 nV	
32	± 1 V		
64	± 500 mV	59.6 nV	
128	± 250 mV		
256	± 125 mV	14.9 nV	

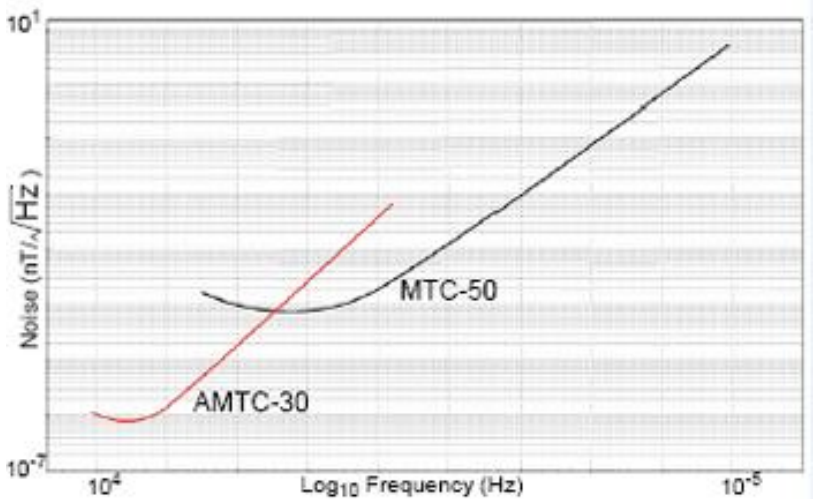
Specification	Description
Sample Rates HS:	48000, 12000, 9600, 8000 sps
Sample Rates LS:	4000, 2000, 1600, 1000, 960, 800, 500, 480, 400, 250, 240, 200, 125, 120, 100, 60, 50 sps

Specification	Description
Time Base	
Type:	GPS Receiver/Clock plus a disciplined oscillator
Accuracy with GPS:	+/- 100 µsec after validated 3-D fix and locked
Free-Running Accuracy:	0.1 ppm over the temperature range of 0°C to 40°C, and 0.2 ppm from -20°C to 0°C
Recording Modes	
Continuous:	All LS modes
HS Mode 0	8000 sps for 360 s; once
HS Mode 1	8000 sps for 360 s; every 10 minutes on the 0, 10, 20, 30, 40, 50 minute marks
HS Mode 2	12000 sps for 240 s; every 10 minutes on the 0, 10, 20, 30, 40, 50 minute marks
HS Mode 3	48000 sps for 60 s; every 10 minutes on the 0, 10, 20, 30, 40, 50 minute marks
HS Mode 4	2 @ 12 ksps for 240 s and 1 @ 48 ksps for 30 s; repeated 20 minutes (12 ksps on 0, 8, 20, 28, 40, 48 minute marks and 48 ksps on 16, 36, and 56 minute marks)
Recording Capacity	
Battery Backed SRAM:	64 Mbytes
Removable Storage:	3 @ 8 GB industrial USB 2 sticks
Recording Format	
Format:	SEED and miniSEED Recording Formats

G.2. MTC 50 (P50) SERIES MAGNETIC SENSORS

Phoenix Geophysics Ltd

MTC-50 magnetic sensor coils weigh just over 10 kg, and measure only 141 cm. They provide magnetotelluric data at frequencies between 400 Hz to 0.00002 Hz.



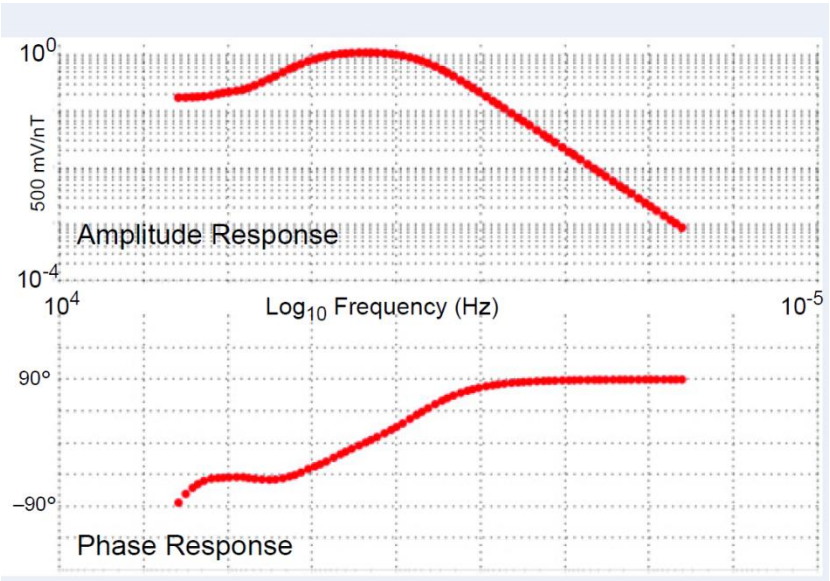
Technical Specifications

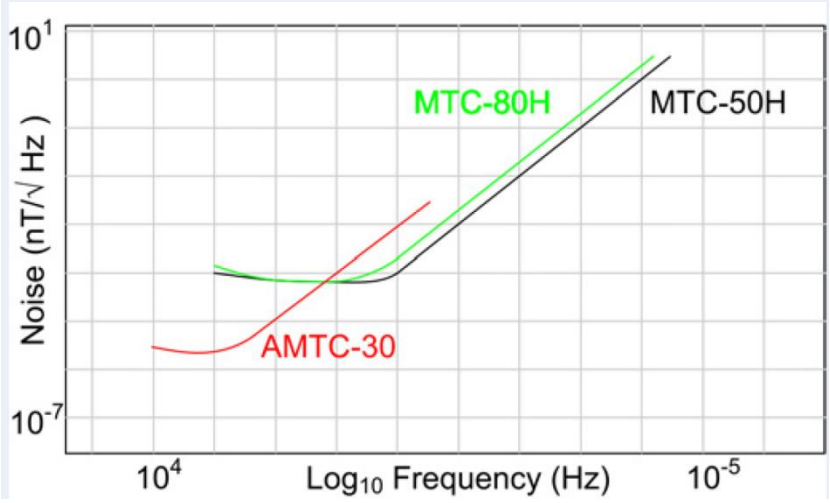
Overall Length : 141 cm
Outside Diameter : 6.0 cm
Weight : 10.5 kg
Frequency Range (for MT) :
400 Hz to 0.00002 Hz

G.3. MTC 80 (P80) SERIES MAGNETIC SENSORS

Phoenix Geophysics Ltd

MTC-80H magnetic sensor coils are the newest addition to the induction coil family. Intended for use in MT surveys to moderate depth, they weigh about 5 kg (half the weight of the MTC-50H) and measure 97 cm in length (70% of the length of an MTC-50H). The MTC-80H provides good data from 400 Hz down to 10 000 seconds, depending on signal strength and local conditions.





Technical Specifications

Overall Length : 98 cm
Outside Diameter : 6.0 cm
Weight : 4.8 kg
Frequency Range (for MT) :
400 Hz to 10 000 seconds

G.4. GHF MAGNETIC FIELD INDUCTION SENSOR

Geometrics

GEOMETRICS
Innovation • Experience • Results

Geometrics G100K Magnetic Induction Sensor

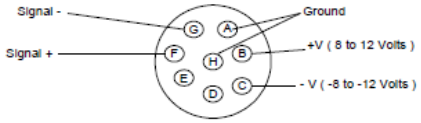
The Geometrics G100K Magnetic Induction Sensors is a highly sensitive, low-noise coil induction sensor. The sensor response is stable and flat over a broad range of frequencies to provide a consistent and reliable measurement for AMT, CSAMT, and other geophysical measurements requiring vector magnetic field measurements four decades of frequencies from 10 Hz to 100k Hz.

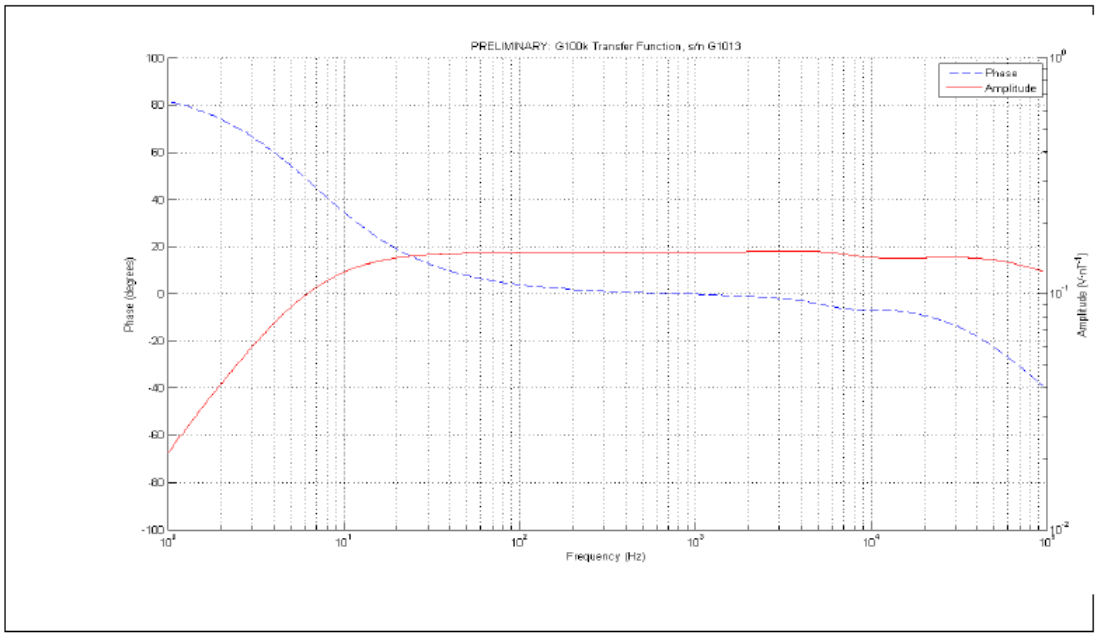
Features:

- Rugged G10 casing
- Low noise
- Stable amplitude and phase response over time and operating temperture
- Low power consumption (480 mW)
- Small diameter and light weight
- Frequency range: 10 Hz to 100 kHz

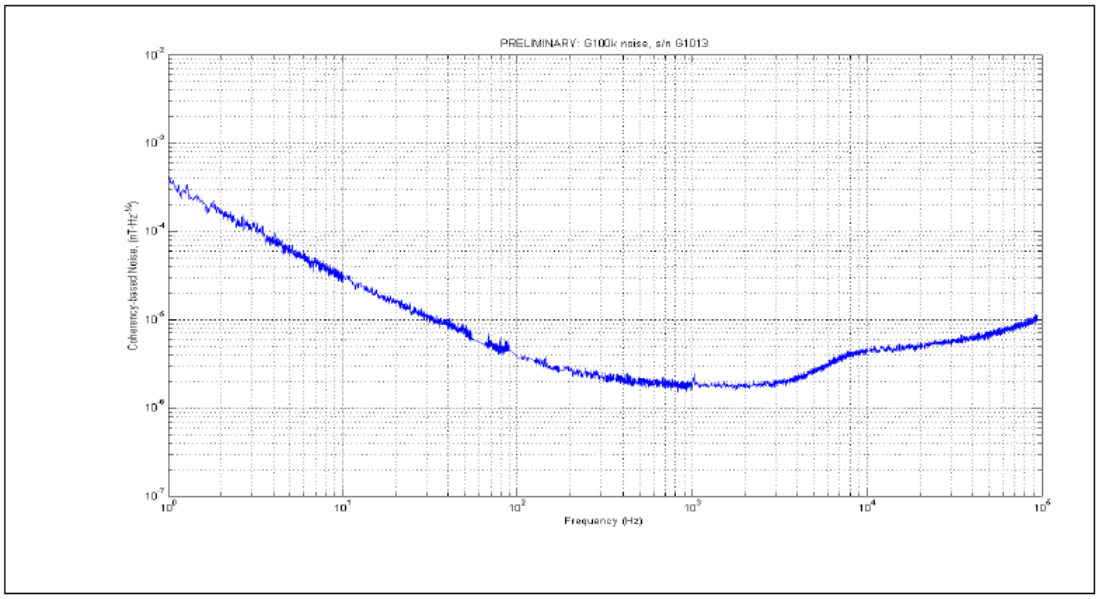
Technical Specifications:

- 3 dB point: 7 Hz and 100 kHz
- Power consumption: 20 mA at +/- 12 V
- Sensitivity in flat region: 150 mV/nT
- Mechanical
  - Length: 76.2 cm (30 in)
  - Diameter: 4.1 cm (1.63 in)
  - Weight: 2.04 kg (4.5 lbs)
- Connector
  - Type: Tajimi 8-pin (23A16-8AM)
  - Mating type: Tajimi 8-pin (23B16-8AF)
  - Dust cap: Tajimi (16 RC)
  - Pin out (show connector pin diagram below)





Typical transfer function (coil response)



Typical noise curve

GEOMETRICS
Innovation • Experience • Results

December 2, 2011

G.5. BF-6 MAGNETIC FIELD INDUCTION SENSOR

Schlumberger –EMI (Electromagnetic Instruments Inc.)Technology Center

Schlumberger

BF-6 Magnetic Field Induction Sensor

PERFORMANCE

- Frequency range: 1 Hz to 25 kHz or 1 Hz to 100 kHz
- 3-dB frequency corners: 10 Hz, 25 Hz or 10 Hz, 100 kHz
- Sensitivity (flat region): 0.3 V/nT (standard)
- Power consumption: 18 mA at ±12 V

MECHANICAL SPECIFICATIONS

- Housing: High-impact acrylonitrile butadiene styrene (ABS) straight tube
- Length: 73 cm (29 in)
- Diameter: 5 cm (2 in)
- Weight: 1.7 kg (3.7 lbm)
- Connector: 8-pin Tajimi

PINOUT SPECIFICATIONS

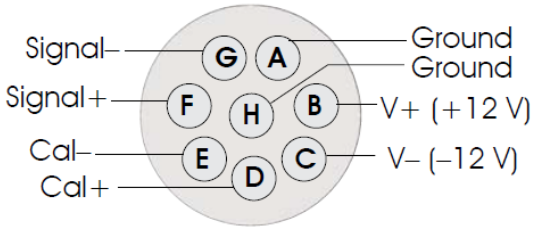
- 8-pin Tajimi connector pinout: 23A16-8AM
- Connector mating part: 23B16-8AF
- Dust cap: 16RC

BF MAGNETIC SENSORS are constructed using a high-magnetic-permeability, mu-metal core with proprietary windings. The coil windings are shielded and epoxy potted inside a high-impact ABS housing.

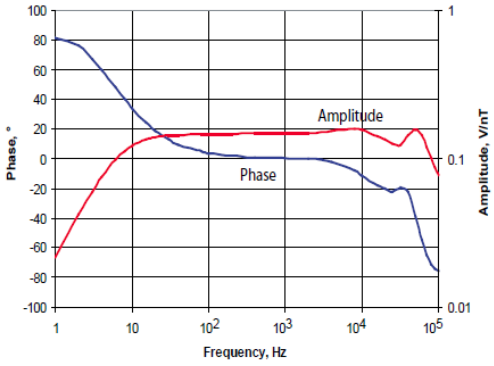
The BF-6 sensor utilizes a magnetic feedback design to yield a stable flat response over several decades of frequency; here, the sensors respond as a B field detector. At frequencies below the flat region, the response is proportional to frequency. The coil and preamplifier are housed in a rugged impact-resistant ABS tube and powered by an external +12 V power supply. The amplifier will drive signals up to 300 m.

APPLICATIONS

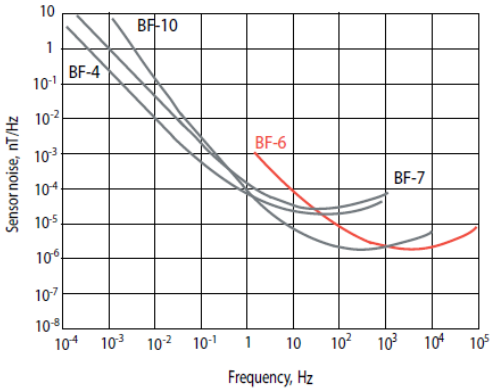
These sensors may be customized for a variety of sevices including geophysical surveys (magnetotelluric, audiomagnetotelluric, controlled source audio frequency magnetotelluric, magnetometric resistivity, magnetic-induced polarization, controlled source electromagnetic, tensor source high-frequency magnetotelluric, Stratagem™), marine surveys, earthquake studies, and high-accuracy magnetic field studies



FREQUENCY RANGE



NOISE PERFORMANCE



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G.6. POROUS POT ELECTRODES (PE5)

Phoenix Geophysics Ltd

Manufactured and screened (electrode-pair) to the following specifications (for stationary MT application and buried at 1 m depth with proper electrode-soil treatment).

Technical Specifications

- 13cm x 7.25cm dia., 0.75kg
- Flat response from DC to 10 000Hz
- Internal resistance <300Ω
- Temperature range +50°C to –10°C
- Temperature drift <0.1 µV/°C
- DC potential <2 mV
- Life Expectancy 2 years

A low noise, low offset, low DC drift, non-polarizing, broadband electrode.

Porous ceramic contact surface and $PbCl_2$ slurry prevent polarization.

Heavy-duty PVC and ABS construction protects against foul weather and temperature variations when buried in the earth.

APPENDIX H. REFERENCES

Telford., W.M., Geldart, L., Sheriff, R., and Keys, D., 1976. Applied Geophysics: Cambridge University Press, New York, NY.

Egbert, G.D., 1997. Robust multiple station magnetotelluric data processing. Geophys. J. Int., 130, 475-496.

Wight, D.E., 1987. MT/EMAP Data Interchange Standard. The Society of Exploration Geophysicists Document.

SUMMARY INFORMATION

QUANTEC OFFICE INFORMATION	
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Email:	info@quantecgeoscience.com
PROJECT INFORMATION	
Client Name:	Yukon Geological Survey
Project Name:	Yukon MT Project
Project Location:	Yukon Territory, Canada
Project Type:	SPARTAN MT
Project Number:	CA01281S
Project Manager:	Mark Morrison
Project Period:	October 8, 2021, to November 2, 2021
Report Type:	Logistics Report
Report Author(s):	Sam Edwards, Darcy McGill
Report date:	November 30, 2021
Reference	*Logistics Report for a SPARTAN MT survey over Yukon MT Project (Yukon Territory, Canada) by Quantec Geoscience Ltd. on behalf of Yukon Geological Survey*
Template version	Version 2021.09.21