Table S1. Information about the network: Site groupings based on various classification factors.

Factor	Grouping	Number of sites
Remoteness factor	Remote	126
	Rural	27
	Urban	25
	Industrial	28
Sensor placement method	Borehole steel	133 (20 predate TA)
	Borehole PVC	23 (3 predate TA)
	AEC-style vault	46
	Direct bury	2
	TA-style large vault	2
Rock conditions at the bottom of the sensor housing	Bedrock	85
	Fractured bedrock	51
	Cobbles/gravels	30
	Sediments/organics	12
	Permafrost	10
	Bog	6
	Undocumented	13
Sensor type	STS-2	3
	STS-5a and 4-b	60
	Trillium 120PH	44
	Trillium 120	54
	Trillium 240	34
	Trillium compact	2
	Guralp EST, 3T, 40T	11

Table S2. Excel Workbook containing site information, site availability, yearly power levels, power levels for each component, seasonal power levels for each component, and the number of mass recenters for each station by year. The following information is for each sheet in the workbook. **Site Information**: This sheet contains details for each broadband site in the AGN. Headers include: site name, latitude, longitude, elevation, documented ground type at sensor depth, remoteness factor (based on Smith and Tape, 2019), sensor vault type, regional noise to be aware of, seasonal noise to be aware of, whether the site is in a basin or not, cultural noise to be aware of, additional noise sources, depth of borehole if applicable, broadband sensor and digitizer models, whether the site has a strong motion, weather, infrasound, or GNSS sensors, and any instrumentation changes during 2021-2024 that could change alter the noise characteristics or result in a change in the number of mass recenters. **Availability**: This sheet contains information on the yearly percent availability of each sensor, as well as summer (defined as June 1 to August 31) and winter (defined as January 1- February 28 plus December 1-December 31). We computed availability for 2024 and 2023. We used whichever year had the most available data for each site. Some sites required data from 2022 and 2021. The final column (Year Used) shows which year we used for our analyses for each site. **Yearly Power Levels**: This sheet shows the average power levels for each site for the year chosen, with the most available data (denoted by *; 1 * if 2023 data was used, 2 * if 2022 data was used, and 3 * if 2021 data was used). Columns B-S are each an average power level for a specific component (0.2s, 1.0s, 5.0s, 18.0s, 35.0s, and 75.0s. Column T shows the average of all components for each site. Columns U-W are site information (name, latitude, and longitude). Columns X, Y, and Z are the indexes for ground type, remoteness factor, and sensor vault type. Column AA is the borehole depth. Columns AB-AH are the yearly average of all components for a site by period band. **Vertical Yearly Power Levels**: This sheet shows the yearly power levels for each period band, the average of all period bands, and the standard deviation for each period band. Site names with asterisks indicate which year's data was used (* for 2023, ** for 2022, and *** for 2021). **North Yearly Power Levels**: Similar to Vertical Yearly Power Levels. **East Yearly Power Levels**: Similar to Vertical Yearly Power Levels. **Vertical Summer Power Levels**: Similar to Vertical Yearly Power Levels. **Vertical Winter Power Levels**: Similar to Vertical Yearly Power Levels. **North Summer Power Levels**: Similar to Vertical Yearly Power Levels. **North Winter Power Levels**: Similar to Vertical Yearly Power Levels. **East Summer Power Levels**: Similar to Vertical Yearly Power Levels. **East Winter Power Levels**: Similar to Vertical Yearly Power Levels. **Mass Recenters**: This sheet shows the total recenters, from the datalogger log files for each year, along with the average percent availability for each year.

Table S3. Excel Workbook containing information about mass recenter events. This information is downloaded from the State-of-Health logs from the Quanterra 330 digitizers. We subset the log table by command type (we only wanted successful recenters) and year, arranged the view to only show station name and date of successful recenter event, and saved to a .tsv file. We then converted the saved files to an Excel Workbook and converted the epoch to a human-readable date-time. Each sheet in the Workbook is for a single year: 2021 through 2024. Only stations that had at least one mass recenter in each year are listed in each sheet. This information was uploaded into Matlab© for analysis.

Table S4. AEC operational, sensor-specific mass-position thresholds used by the dlautomrc automated recentering system for sensors paired with Q330 digitizers. Thresholds are expressed in volts; Q330 mass-position values are recorded at 10 counts per volt.

Mass Position Threshold (V)	Sensor Manufacturer
2.0	Nanometrics Trillium (120 and 240), Streckeisen STS 5A
2.5	Güralp (CMG3T and 5T)
3.5	Streckeisen (STS2, 4B)

Table S5. Mean power values for each noise factor type. The top three rows (italicized) are the factors with the highest noise levels when averaged across all stations, channels, and period bands. The bottom three rows (italicized) are the factors with the lowest noise levels when averaged across all stations, channels, and period bands. The table is sorted by mean power values. The averages for each type include all stations except DCPH and H23K (removed from all analyses due to data availability) as well as H21K, H22K, P16K, PS01, PS04, and PS06 (removed from averages due to malfunctioning sensors).

Factor	**Description**	**Identifier**	**Mean Power**
Ground Type	*Sediments/Organics*	*4*	*-136.6*
Vault Type	*Direct Bury*	*4*	*-140.5*
Ground Type	*Undocumented*	*7*	*-140.8*
Vault Type	TA Tank	5	-141.3
Vault Type	Vault	3	-143.5
Remoteness	Industrial	4	-143.9
Ground Type	Bog	6	-144.5
Remoteness	Urban	3	-145.3
Ground Type	Cobbles/Gravel	3	-145.3
Vault Type	Borehole PVC	2	-146.3
Ground Type	Fractured Bedrock	2	-147.1
Remoteness	Rural	2	-147.6
Remoteness	Remote	1	-150.4
Vault Type	*Borehole Steel*	*1*	*-150.9*

Ground Type	*Permafrost*	*5*	*-152.6*
Ground Type	*Bedrock*	*1*	*-152.9*

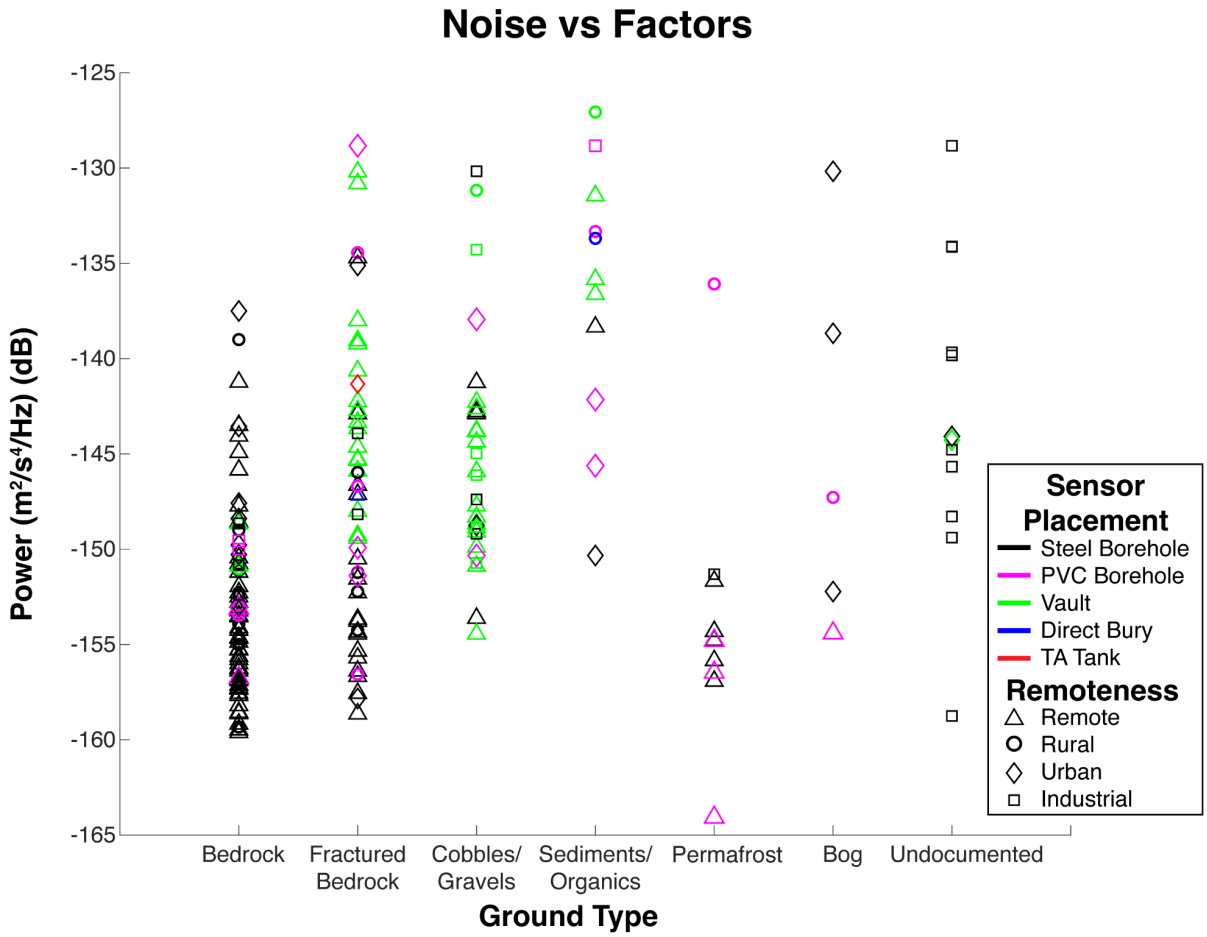

Figure S1. Another view of noise vs remoteness, vault type, and ground type. The x-axis represents the ground type, and the y-axis represents the power level. The different shapes are the remoteness factor, and the various colors are the sensor placement (vault) type.

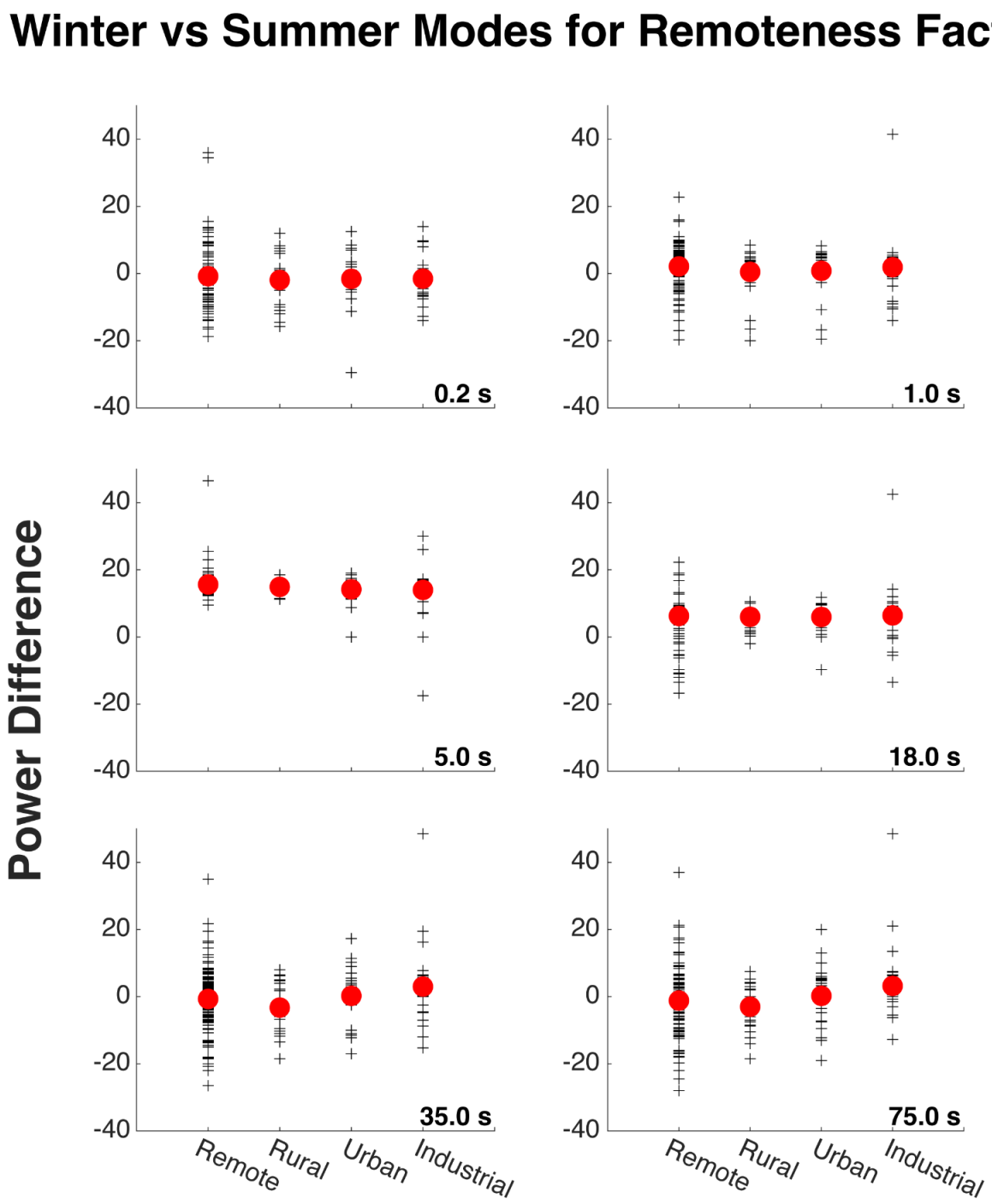

Figure S2. A representation of winter vs summer differences. Each subplot is an average of the power values on the two horizontal components for each period band. Red circles indicate the

average values for each group. Negative and positive values indicate noisier summers/quieter winters and quieter summers/noisier winters, respectively. The X-axis is the remoteness factor.

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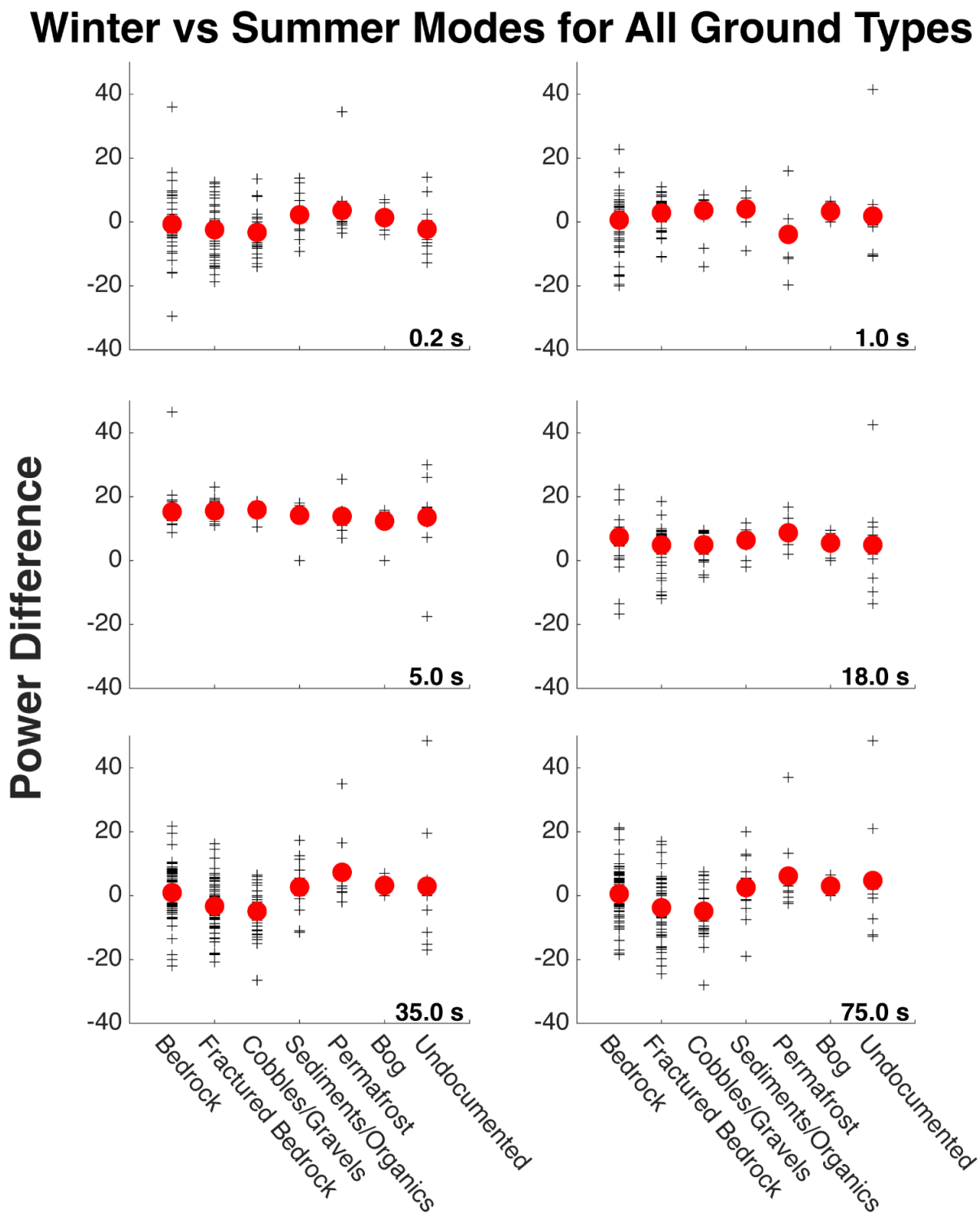


Figure S3. Another representation of the differences between winter and summer, similar to Figure S2. The X-axis is the ground type.

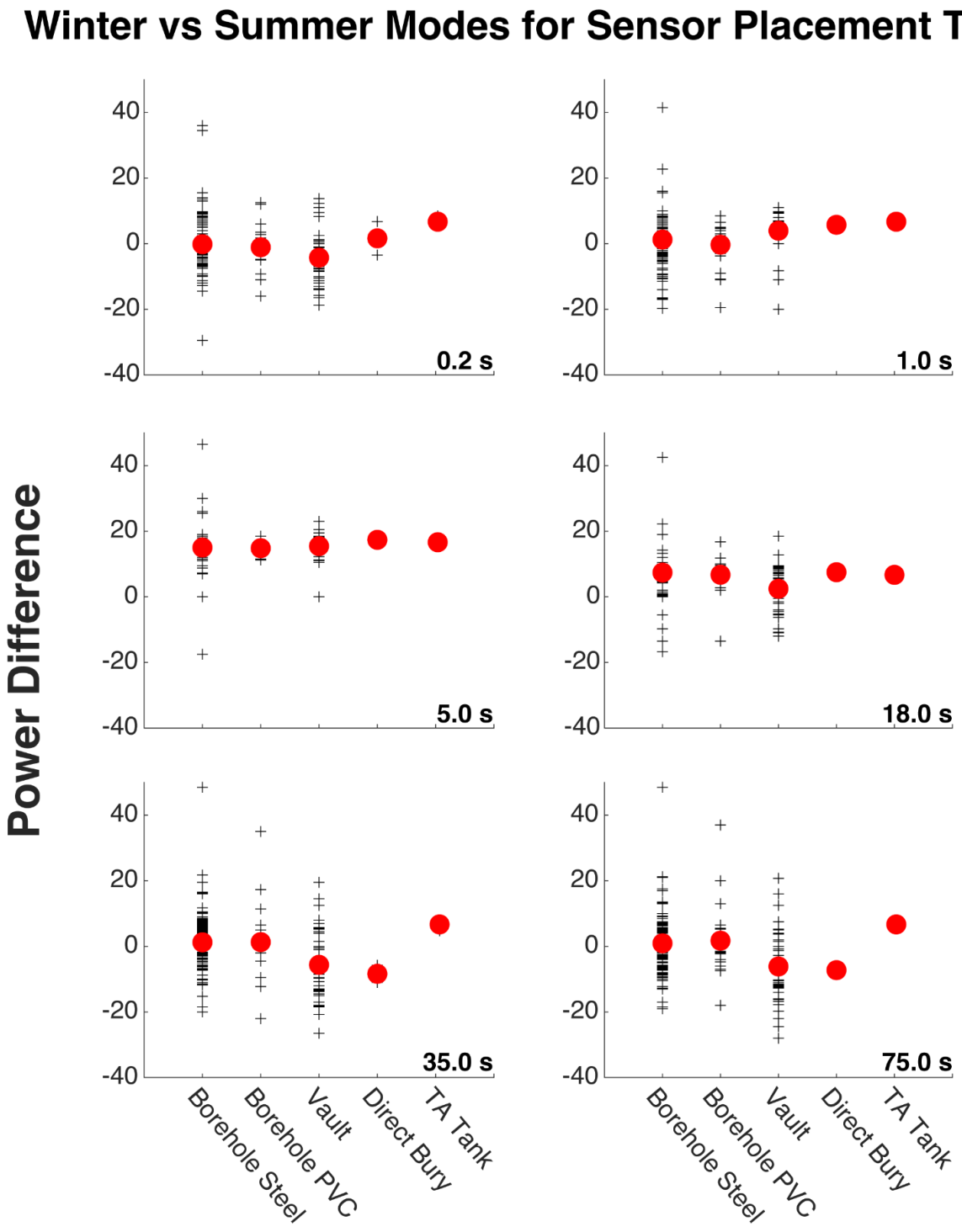
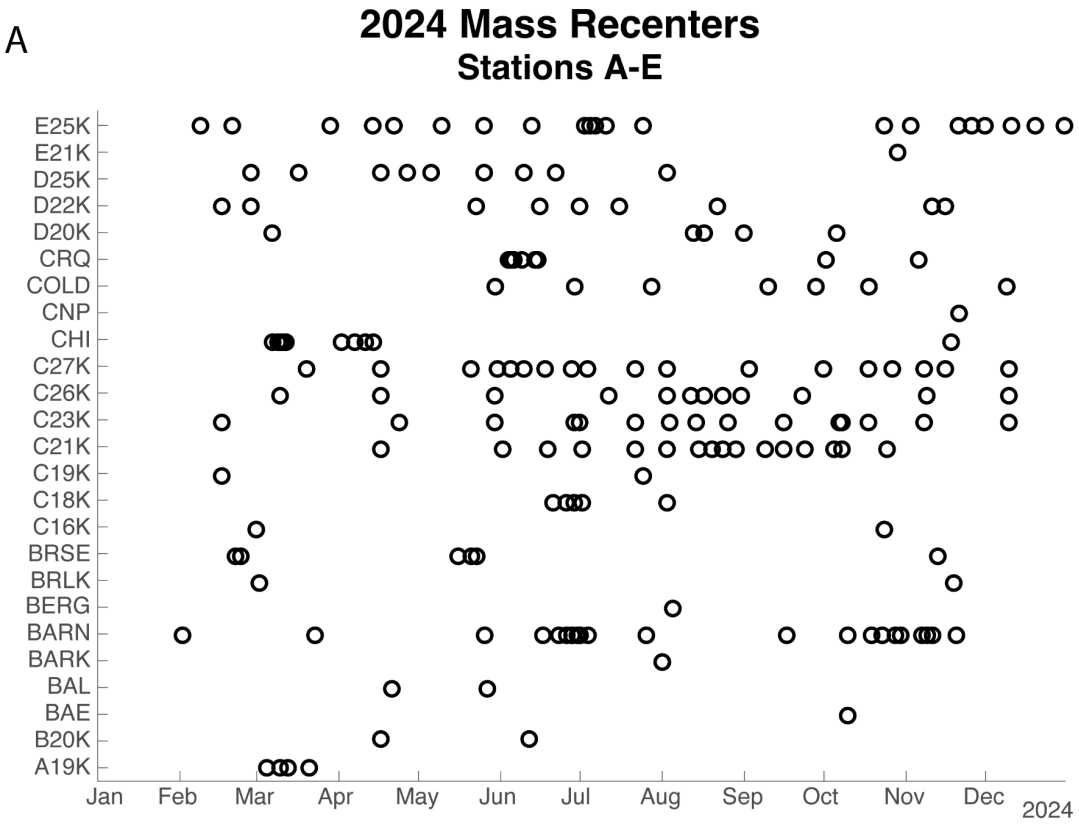
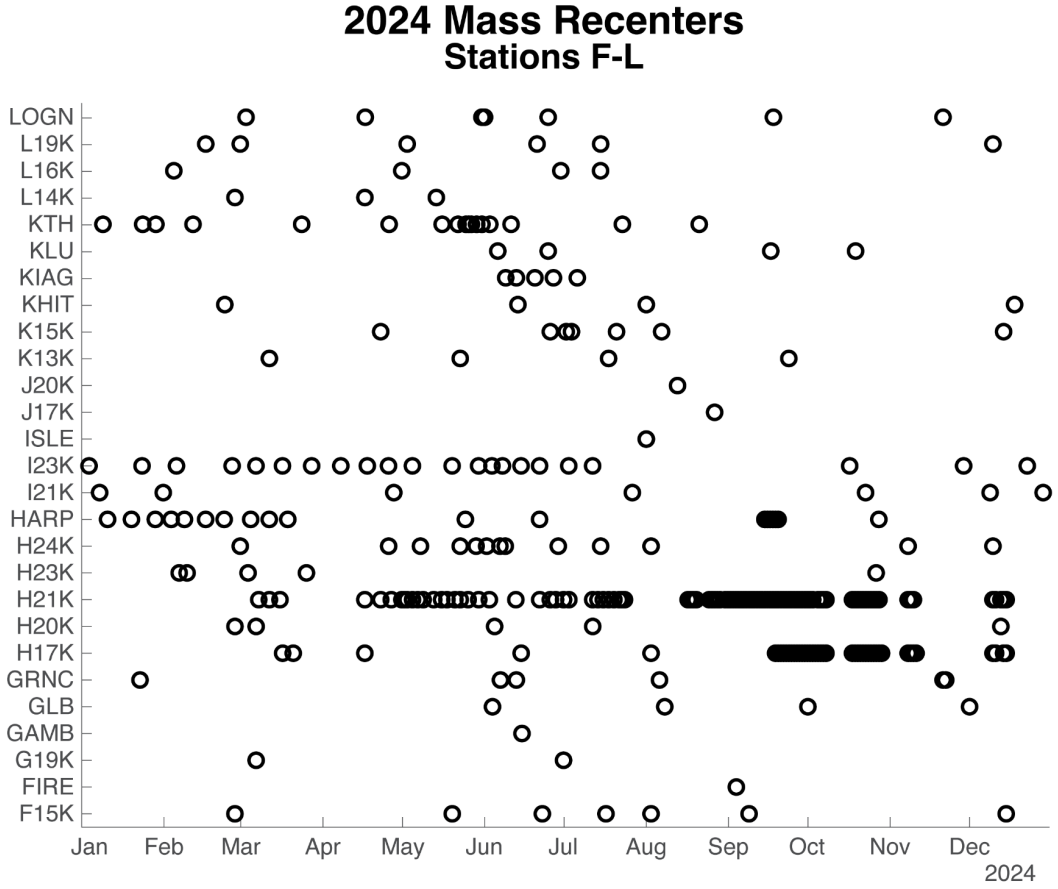


Figure S4. Another representation of the differences between winter and summer, similar to Figure S2. The X-axis is the sensor placement type.

A


2024 Mass Recenters
Stations A-E
E25K
E21K
D25K
D22K
D20K
CRQ
COLD
CNP
CHI
C27K
C26K
C23K
C21K
C19K
C18K
C16K
BRSE
BRLK
BERG
BARN
BARK
BAL
BAE
B20K
A19K
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec
2024

B


2024 Mass Recenters
Stations F-L
LOGN
L19K
L16K
L14K
KTH
KLU
KIAG
KHIT
K15K
K13K
J20K
J17K
ISLE
I23K
I21K
HARP
H24K
H23K
H21K
H20K
H17K
GRNC
GLB
GAMB
G19K
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Jul
Aug
Sep
Oct
Nov
Dec
2024

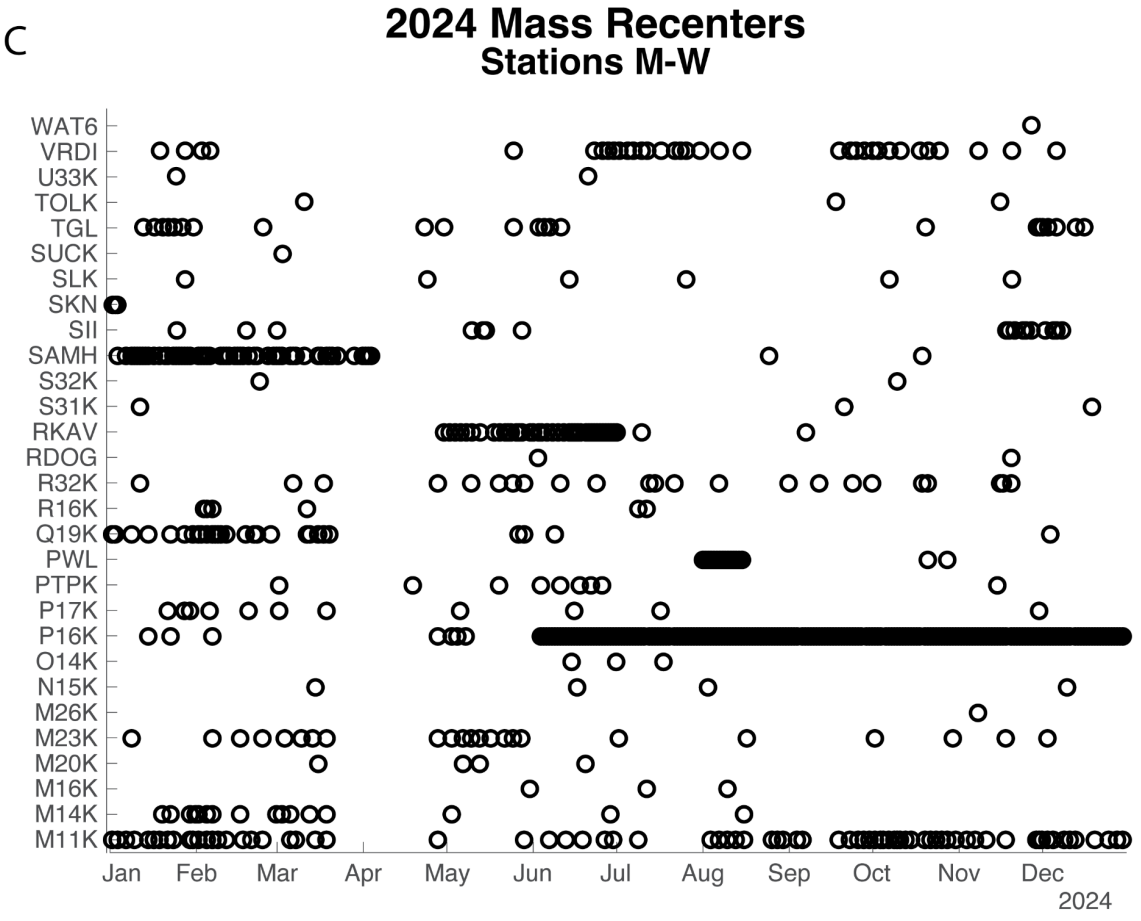

Figure S5. Mass recenters at each station during 2024. Only stations with 1 or more mass recenters during 2024 are shown. A) A-E station names. B) F-L station names. C) M-W station names.

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