Jumps: caused by water?

- Preliminary look at weather on current data set (4 days)
- See how bad jumps are in each data set

Beam cuts (NOT traditional holography - thanks Bruce!):

- Want to compare beamshape of east and west dish
- Beamshapes are processed by fitting to a gaussian to normalize height and shift center value to zero, and averaged
- Looking at real part

Define 'jumpy'

Can take about 10 data points to do most of jump.
This is unprocessed, unaveraged voltage beam, wanted to see jump in original data
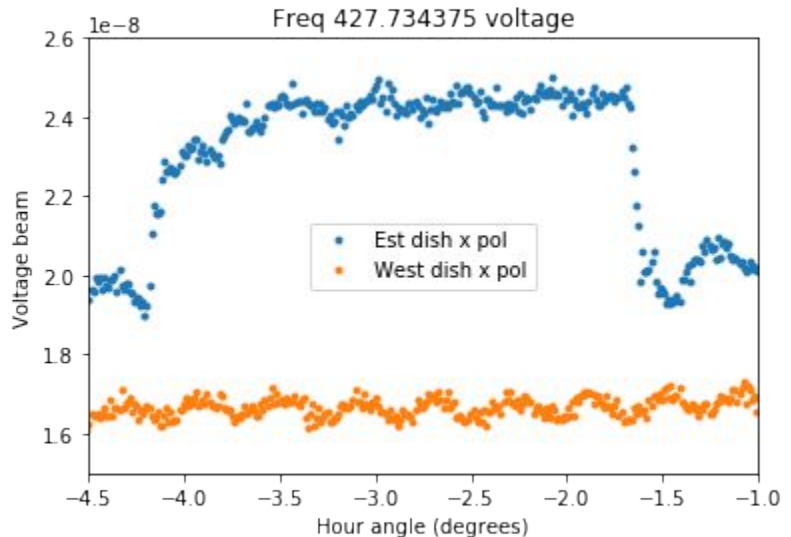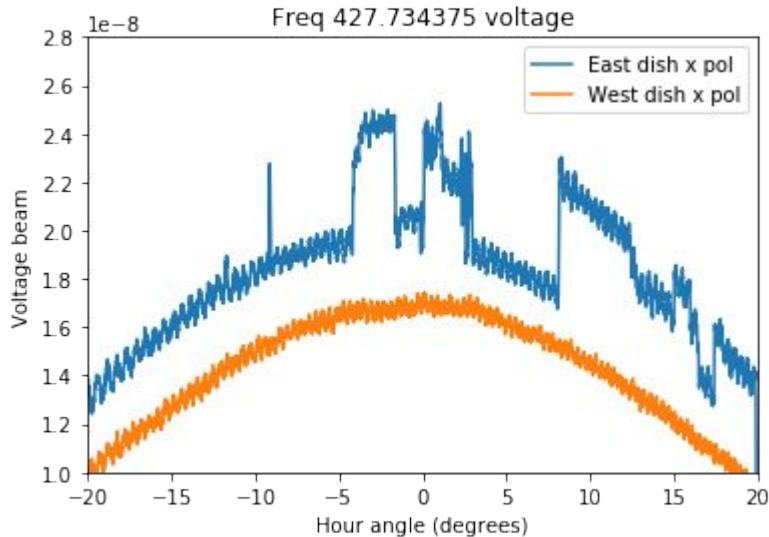
Brief jump and weather summary of current data

Date	One sentence summary	Weather (deg C)
Nov 5 2019 20191105T004657Z	Large jumps more in east dish	-4 to 12, no rain/snow
Jan 08 2020 (partial) 20200108T233134Z	Medium jumps mostly east dish	-3 to 7, possibly some melting snow
Jan 09 2020 20200109T205504Z	Smaller jumps mostly east dish	-7 to 0, possibly some melting snow or rain
Jan 30 2020 20200130T135510Z	Jagged large jumps east dish	1 - 6, possibly some snow on previous days

Weather resources

NOAA stations near Penticton:
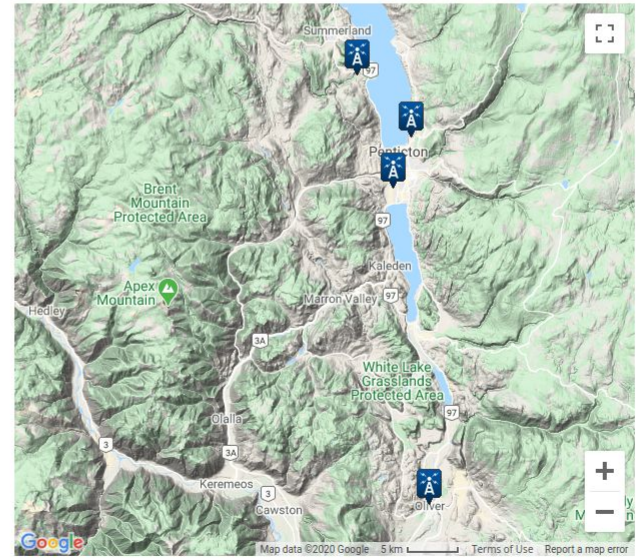
    https://www.ncdc.noaa.gov/cdo-web/

Can download months worth of data at once.

Not all stations have all types of data (temp, precip, snowfall, snowfall on ground) or have them all the time.

Miscellaneous temperature sites:

- https://www.timeanddate.com/weather/canada/penticton/historic?month=1&year=2020
- https://www.almanac.com/weather/history/postalcode/V0H%201K0/2019-11-03
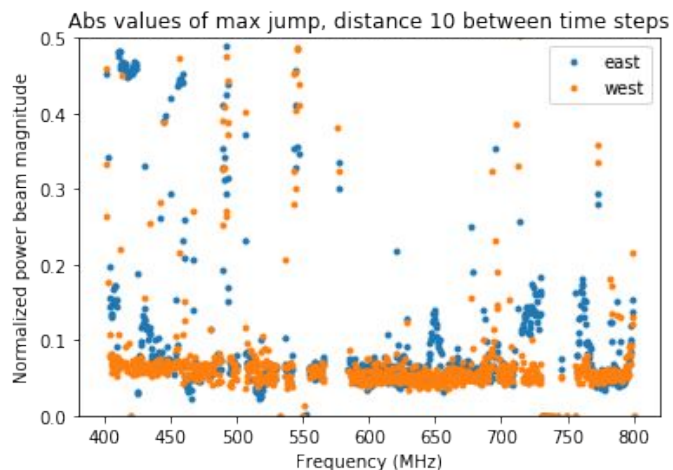
How bad are jumps between datasets?
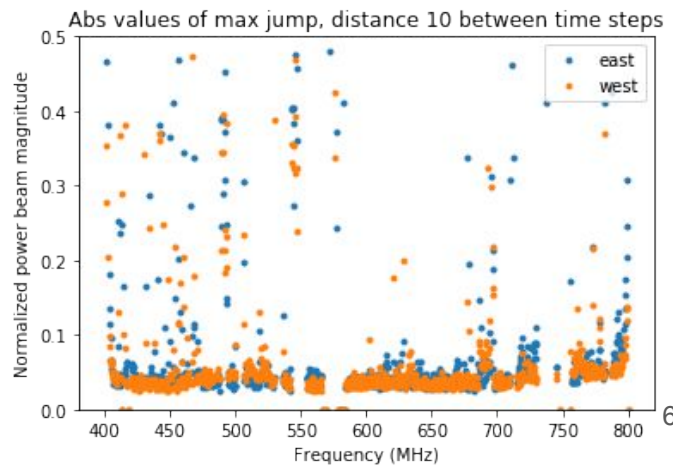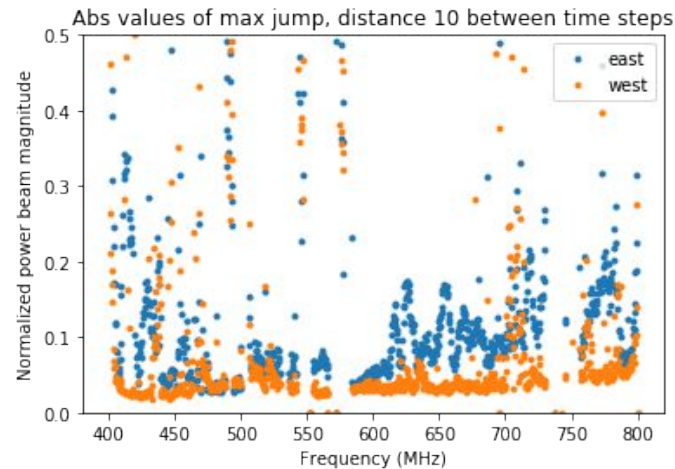
One metric: look at 'max jump' over frequencies

- Largest jump between a data point and one 10 steps forward.
- Can see how prevalent jumps are in the dataset and what frequencies they affect the most
- Looking at plots: extremely high jump values from RFI
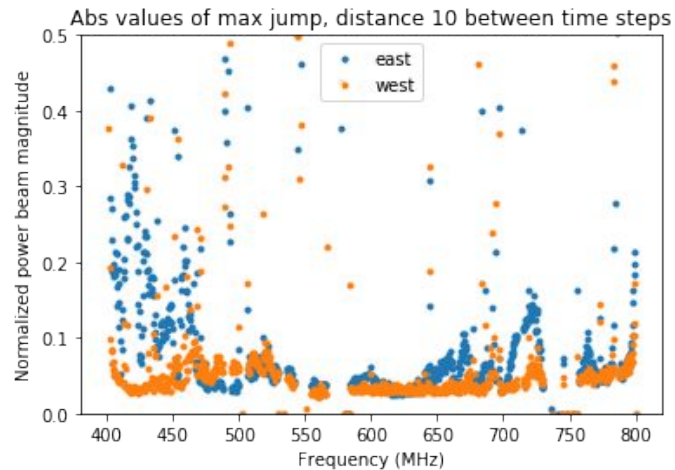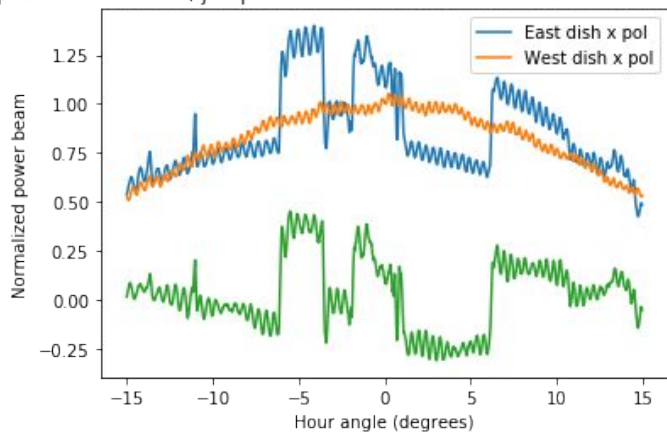
Nov. 5, 2019 (above)
Jan. 30, 2020 (below)

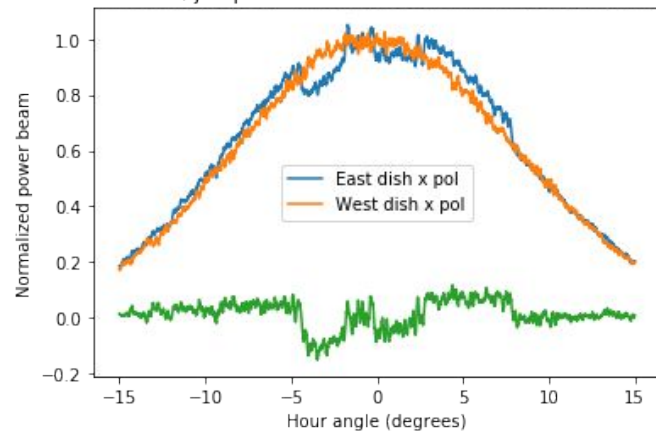Jan. 8, 2020 (above)
Jan. 9, 2020 (below)

Examples: Nov 5 2019

Averaging - 10
Mean and std in title are from residual
between east and west dish

Freq 429.6875 ind 948, jumps east 0.2343 west 0.0336 resid mean 0.03 std 0.1777

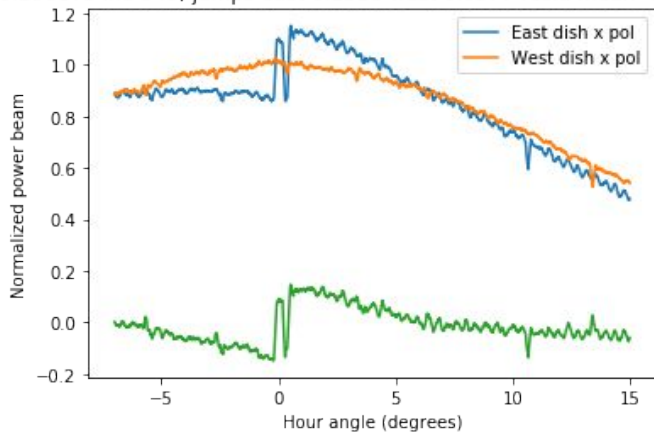Freq 728.515625 ind 183, jumps east 0.0533 west 0.0418 resid mean 0.0125 std 0.0467
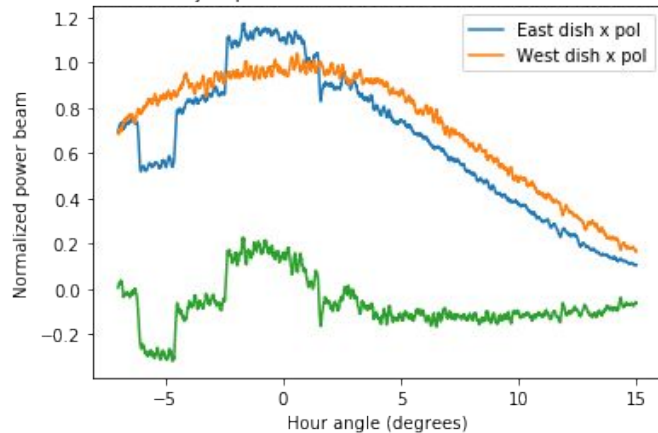
Examples: Jan 08 2020 (partial)

Averaging - 10
Mean and std in title are from residual
between east and west dish

req 429.296875 ind 949, jumps east 0.1318 west 0.0577 resid mean -0.014 std 0.065
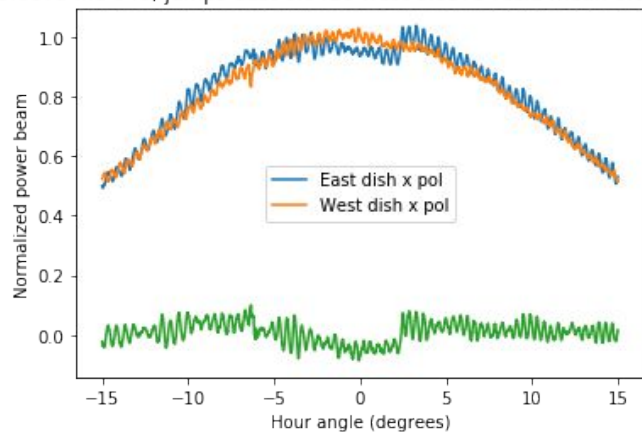

Freq 728.515625 ind 183, jumps east 0.132 west 0.0498 resid mean -0.0674 std 0.1123
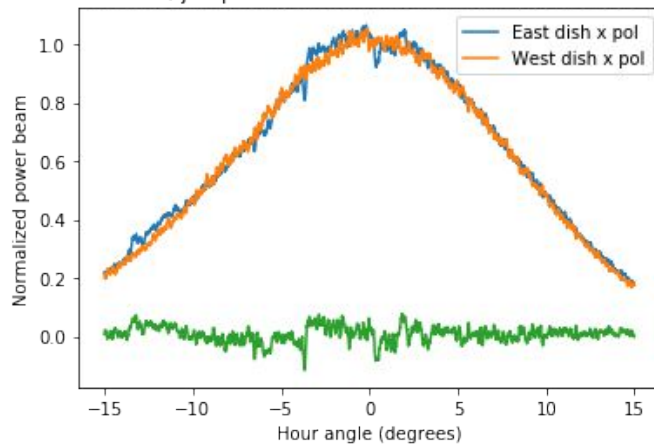
Examples: Jan 09 2020

Averaging - 10
Mean and std in title are from residual
between east and west dish

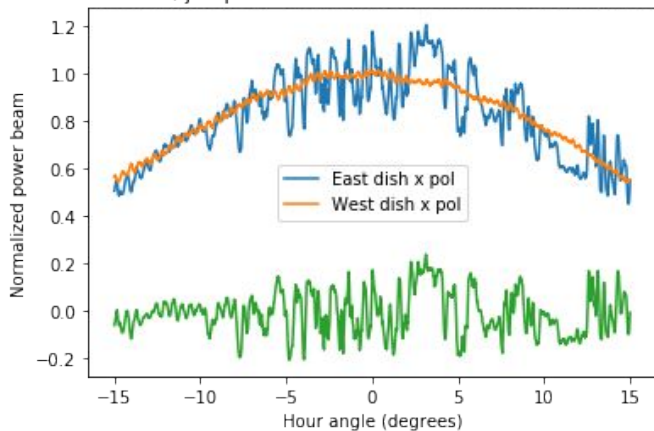Freq 429.6875 ind 948, jumps east 0.0416 west 0.0375 resid mean 0.0079 std 0.0343

Freq 728.90625 ind 182, jumps east 0.0681 west 0.0372 resid mean 0.0078 std 0.026

Examples: Jan 30 2020

Averaging - 10
Mean and std in title are from residual
between east and west dish

Freq 429.296875 ind 949, jumps east 0.1743 west 0.0216 resid mean -0.0085 std 0.088

Freq 728.125 ind 184, jumps east 0.1516 west 0.0407 resid mean 0.0079 std 0.0709