

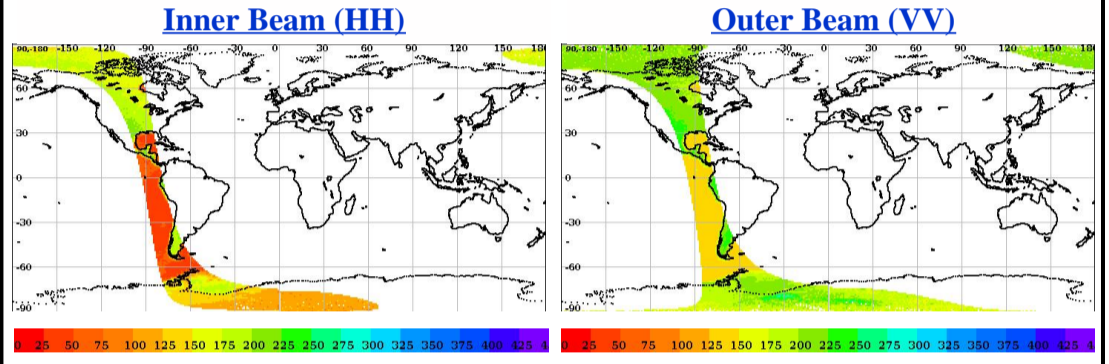
# SCATSAT-1 Scatterometer Level-1B Data Quality Evaluation Report

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<b>Satellite Id</b>	ScatSat-1	<b>Start Orbit</b>	826	<b>Total Scans</b>	1002
<b>Sensor Name</b>	Scatterometer	<b>End Orbit</b>	827	<b>No of Inner FootPrints</b>	281
<b>Processor Version</b>	1.0	<b>Rev. Number</b>	00826_00827	<b>No Of Outer FootPrints</b>	282
<b>Half Orbit Direction</b>	SN	<b>Data Production Date</b>	22-11-2016	<b>No. Of Inner Slices</b>	9
<b>Equator Crossing Date</b>	22-11-2016	<b>Equator Crossing Time</b>	02:54:17.000	<b>No Of Outer Slices</b>	15

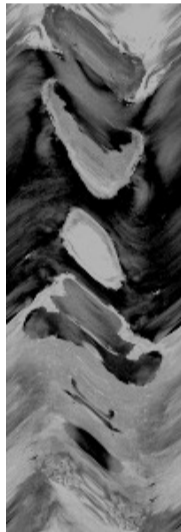
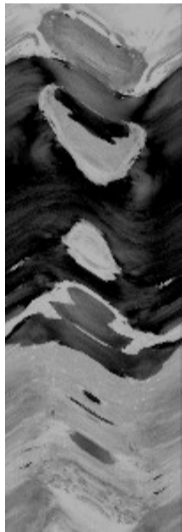
## Brightness Temperature(k) Footprint trace



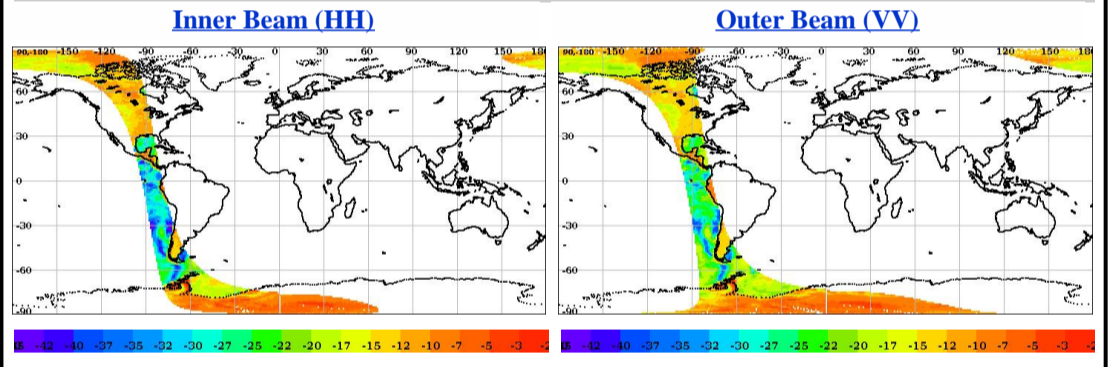
## Image Snapshot for Inner & Outer Beam

Inner (HH)

Outer (VV)



## Sigma0(dB) Footprint trace



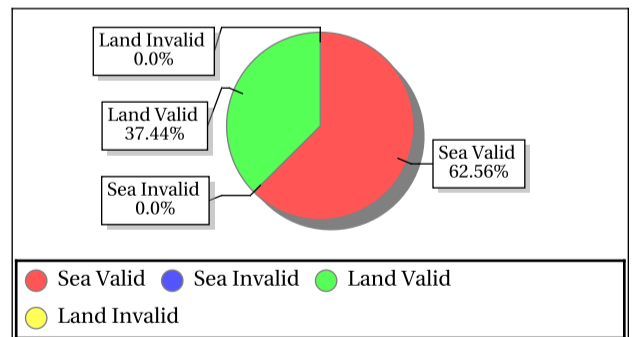
## Invalid and Poor Sigma-0 Quality Flag Statistics for Inner/Outer Slices\*

Sigma-0 Flags	Inner Beam	Outer Beam
Invalid Sigma0(%)	0.00	0.03
Data Not Available From Payload (%)	0.0	0.0
Slice not within sample array limits (%)	0.00	100.00
C(S+N) - C(N) < 0.1 (%)	0.00	0.00
Poor Sigma0(%)	0.01	0.01
Noise samples for blending Saturated	0.0	0.0
Count samp. for interpol. saturated (%)	0.00	0.00
Sigma0 < lower bound (-96dB) (%)	0.0	0.0
Sigma0 > upper bound (0 dB) (%)	0.00	0.00
SNR < -65 dB (%)	100.0	100.0

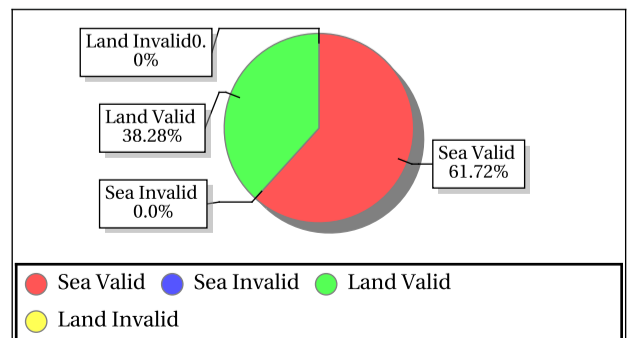
\*DP Format Document

## Sigma-0 Quality Flag Statistics for Inner/Outer Footprints

### Inner Beam (HH)



### Outer Beam (VV)



## Overall statistics for the Static Parameters (Footprint-wise)

Inner Beam (HH)																
	Sea Aft				Sea Fore				Land Aft				Land fore			
	Min	Max	Mean	Bad Occ. (%)	Min	Max	Mean	Bad Occ. (%)	Min	Max	Mean	Bad Occ. (%)	Min	Max	Mean	Bad Occ. (%)
<b>Kp</b>	0.10	213.28	0.36	3.730	0.10	225.98	0.31	2.762	0.10	0.38	0.10	0.000	0.10	0.27	0.10	0.000
<b>Kpa</b>	0.01	0.01	0.01	0.000	0.01	0.01	0.01	0.000	0.01	0.01	0.01	0.000	0.01	0.01	0.01	0.000
<b>Kpb</b>	0.01	0.02	0.01	0.000	0.01	0.02	0.01	0.000	0.01	0.01	0.01	0.000	0.01	0.01	0.01	0.000
<b>Kpc</b>	0.01	0.01	0.01	0.000	0.01	0.01	0.01	0.000	0.01	0.01	0.01	0.000	0.01	0.01	0.01	0.000
<b>SNR</b>	-34.02	26.03	3.91	1.699	-34.27	27.76	5.56	2.448	-5.49	30.80	19.66	19.981	-3.34	31.10	19.57	16.559

Outer Beam (VV)																
	Sea Aft				Sea Fore				Land Aft				Land fore			
	Min	Max	Mean	Bad Occ. (%)	Min	Max	Mean	Bad Occ. (%)	Min	Max	Mean	Bad Occ. (%)	Min	Max	Mean	Bad Occ. (%)
<b>Kp</b>	0.08	201.06	0.29	2.875	0.08	208.40	0.26	2.353	0.08	0.32	0.08	0.000	0.08	0.20	0.08	0.000
<b>Kpa</b>	0.01	0.01	0.01	0.000	0.01	0.01	0.01	0.000	0.01	0.01	0.01	0.000	0.01	0.01	0.01	0.000
<b>Kpb</b>	0.01	0.01	0.01	0.000	0.01	0.01	0.01	0.000	0.01	0.01	0.01	0.000	0.01	0.01	0.01	0.000
<b>Kpc</b>	0.00	0.00	0.00	0.000	0.00	0.00	0.00	0.000	0.00	0.01	0.00	0.000	0.00	0.01	0.00	0.000
<b>SNR</b>	-34.78	19.78	2.33	0.000	-34.94	19.19	4.10	0.000	-5.76	24.02	14.05	0.509	-3.10	24.25	13.83	0.224

Parameter Specifications					
Parameter	Kp	Kpa	Kpb	Kpc	SNR
Min	0.00	0.00	0.00	0.00	-65.00
Max	1.00	1.00	1.00	1.00	22.00

- Normal
- Deviations
- Alarming
- High Errors

## Overall statistics for static parameter (Footprint-wise)

	Inner Beam (VV)				Outer Beam (VV)				Parameter Specifications		
	Min	Max	Mean	Bad Occ. (%)	Min	Max	Mean	Bad Occ. (%)	Parameter	Min	Max
<b>Incidence Angle (deg)</b>	48.92	49.38	49.10	0.000	57.66	58.26	58.03	0.000	Inci.(Inner)	47.10	49.90
<b>Azimuth Diff. (deg)</b>	0.0026	1.29	1.13	0.157	0.0027	1.29	1.14	0.174	Inci.(Outer)	57.30	58.90
<b>Range(Km)</b>	1032.10	1095.78	1055.72	0.073	1208.58	1287.70	1236.72	12.485	Azimuth Diff.	0.60	2.00
<b>X Factor(dbm)</b>	-91.39	-90.06	-90.25	0.000	-93.02	-91.99	-92.21	0.000	Range(Inner)	1025.00	1095.70
<b>Across Distance (Km)</b>	15.38	15.93	15.63	0.000	16.58	34.83	20.54	1.000	Range(Outer)	1210.00	1280.00
<b>Along Distance (Km)</b>	18.81	20.45	19.73	0.000	18.50	20.54	19.64	0.000	X-Factor	-100.00	-80.00
									Ac.Distance(Inner)	15.00	20.00
									Ac.Distance(Outer)	15.00	22.00
									Al.Distance(Inner)	15.00	30.00
									Al.Distance(Outer)	10.00	30.00

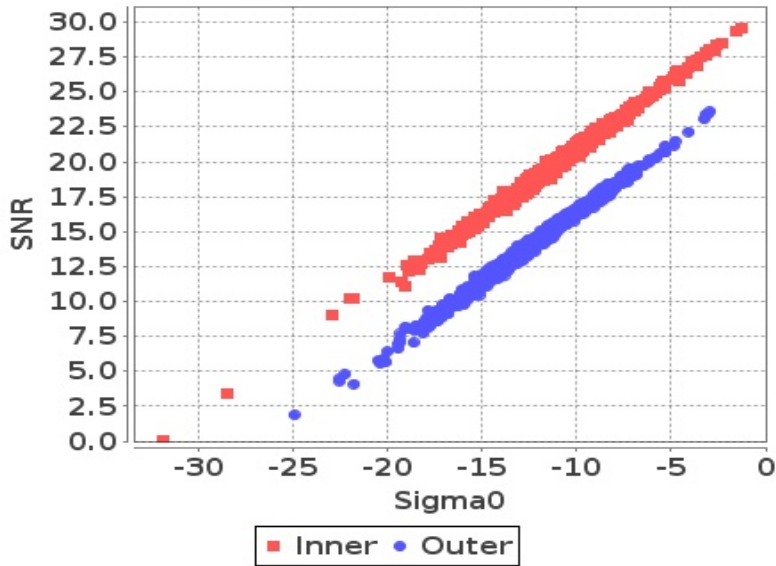
- Normal
- Deviations
- Alarming
- High Errors



## Sigma0 Behaviour (Sigma0 Vs SNR)

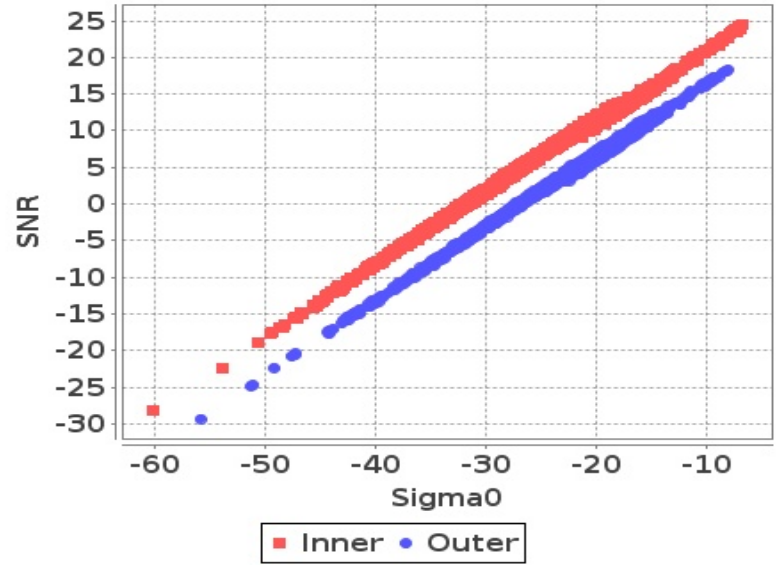
Footprint-Land

Sigma0 Vs SNR (Land)



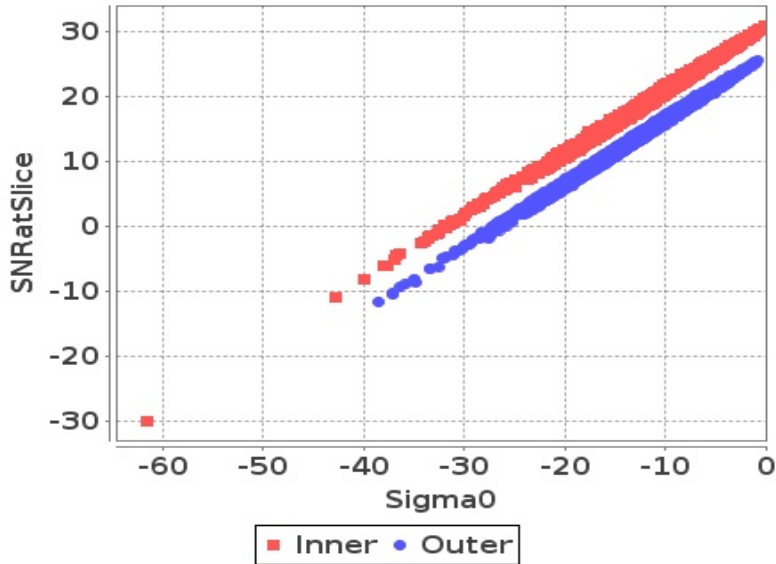
Footprint-Sea

Sigma0 Vs SNR (Sea)



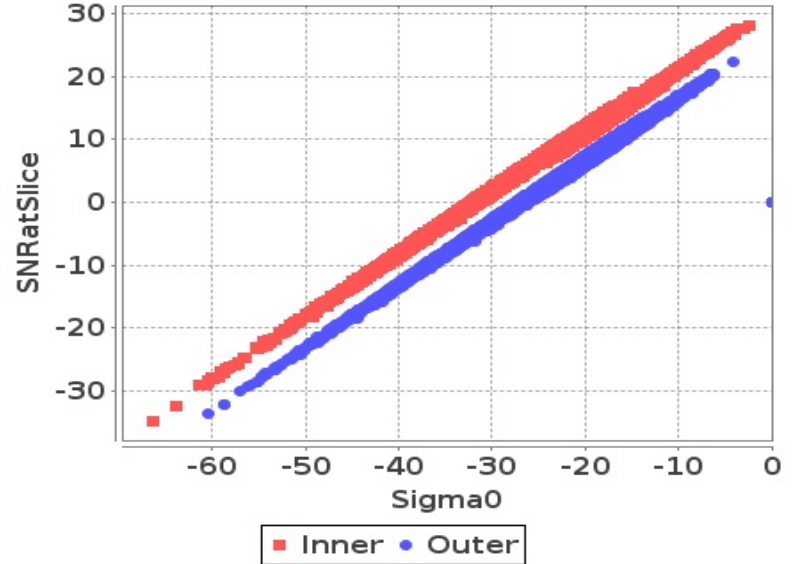
Slice-Land

Sigma0 Vs SNRatSlice (Land)



Slice-Sea

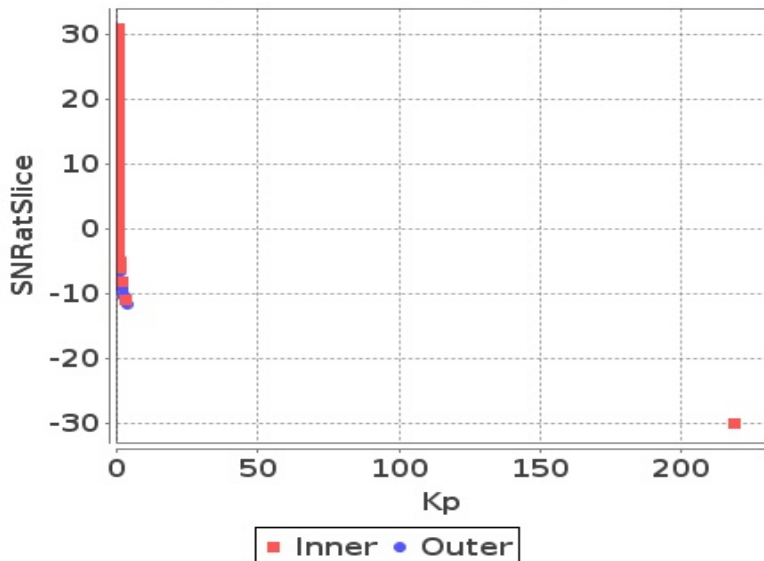
Sigma0 Vs SNRatSlice (Sea)



## Sigma0 Behaviour (Kp Vs SNR)

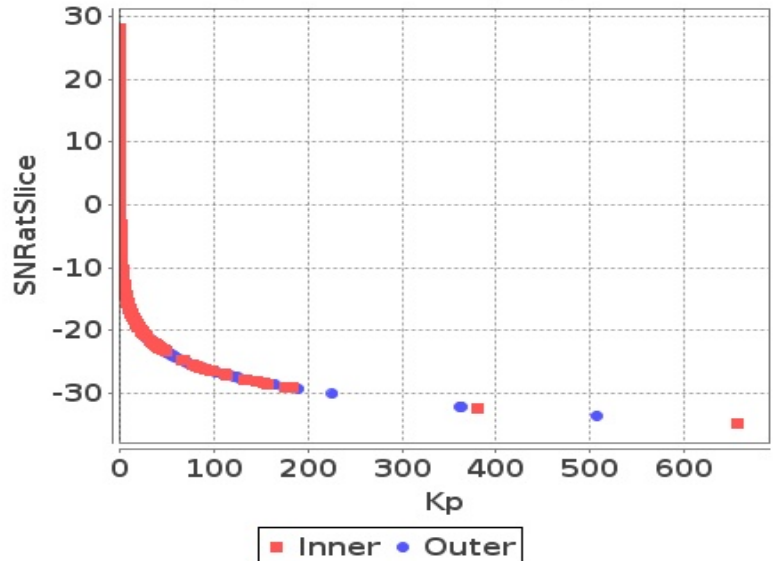
Slice

Kp Vs SNRatSlice (Land)



Slice

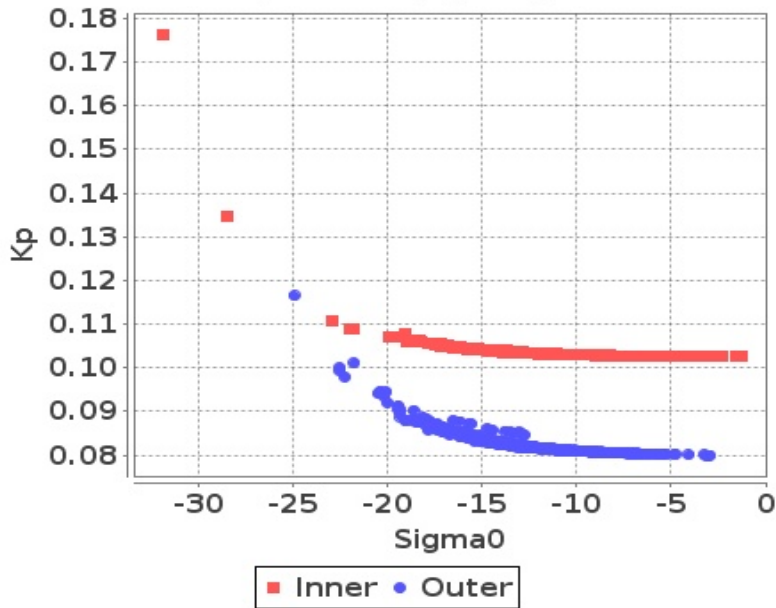
Kp Vs SNRatSlice (Sea)



# Sigma0 Behaviour(Sigma0 Vs Kp)

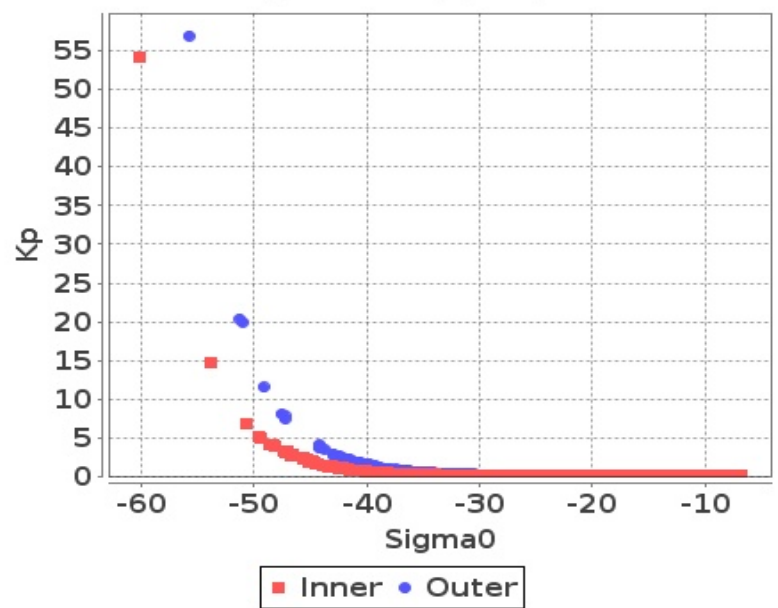
## Footprint-Land

### Sigma0 Vs Kp (Land)



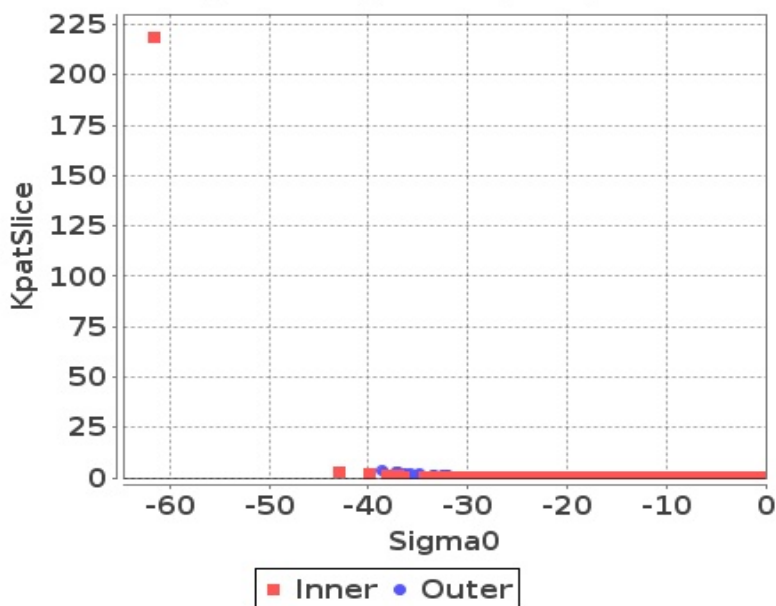
## Footprint-Sea

### Sigma0 Vs Kp (Sea)



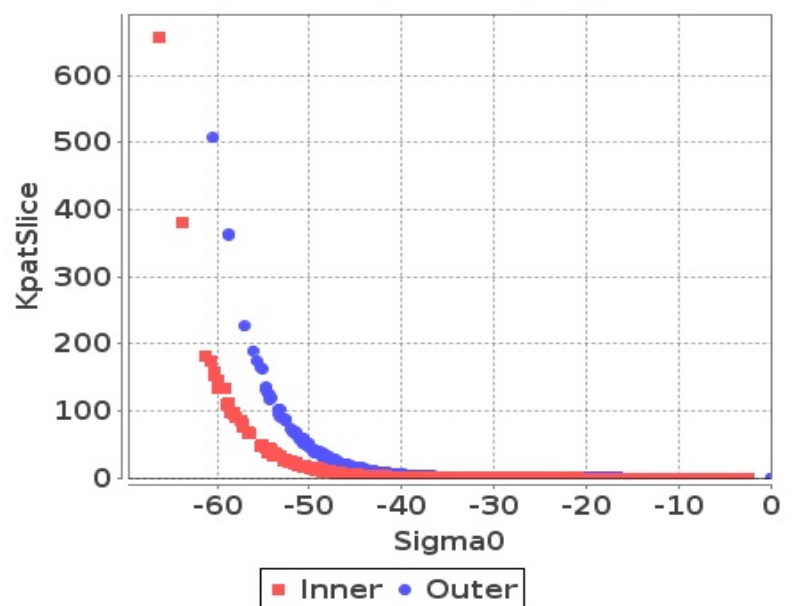
## Slice-Land

### Sigma0 Vs KpatSlice (Land)



## Slice-Sea

### Sigma0 Vs KpatSlice (Sea)



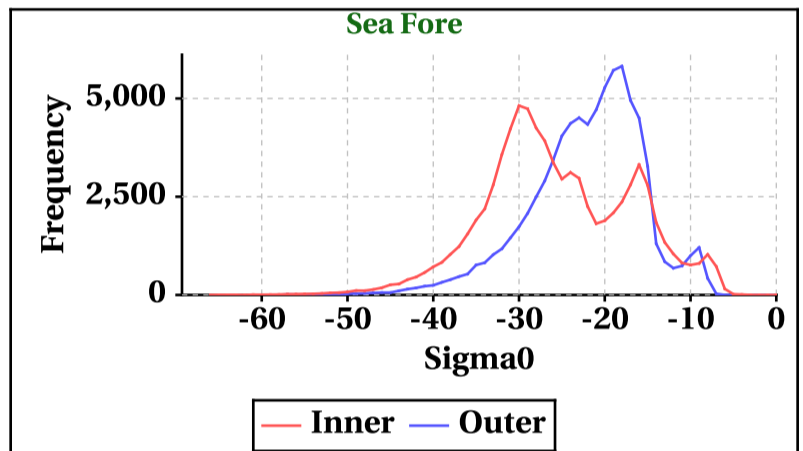
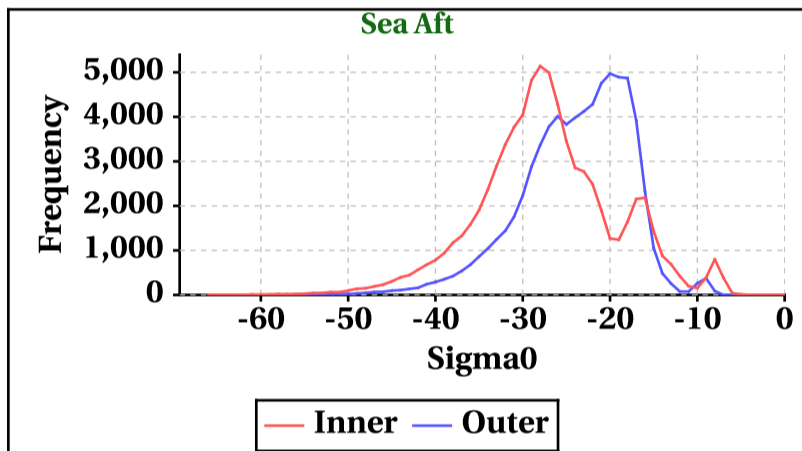
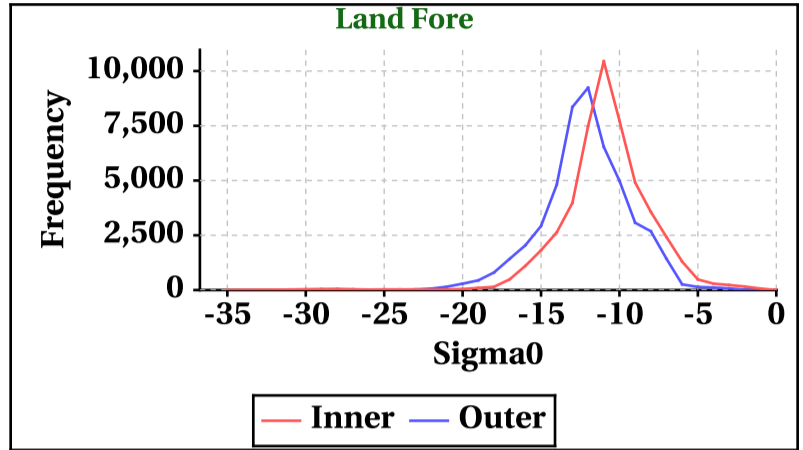
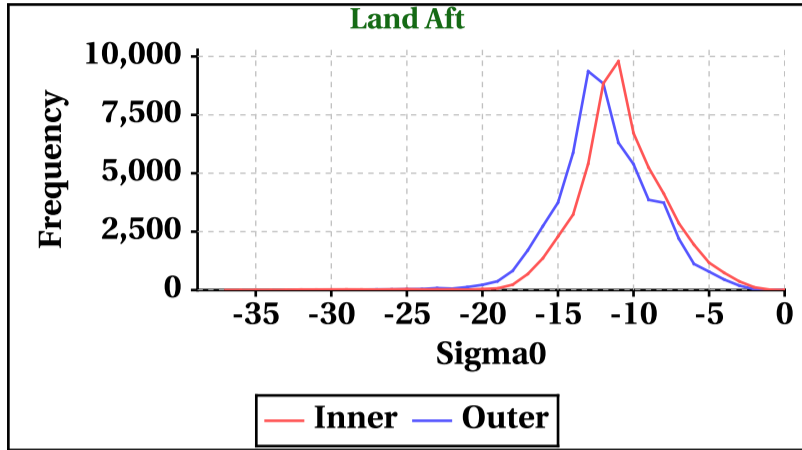


# Dynamic Range (Data Histograms)

## Sigma0(db)

Inner Beam (HH)				
	Land Aft	Land Fore	Sea Aft	Sea Fore
Min	-37	-35	-66	-66
Max	0	0	0	0

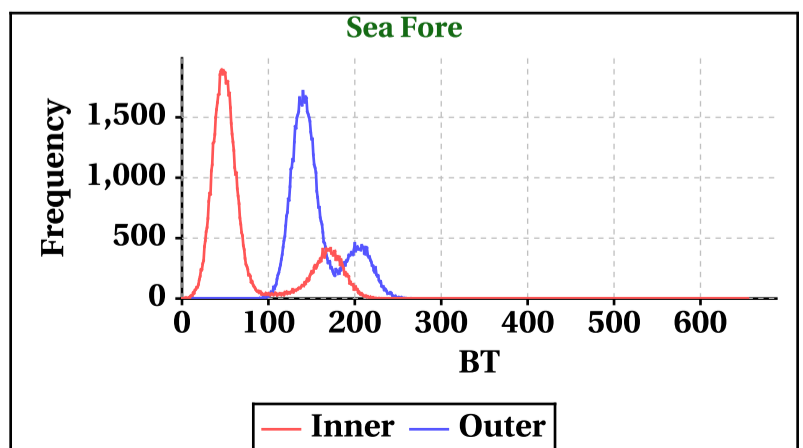
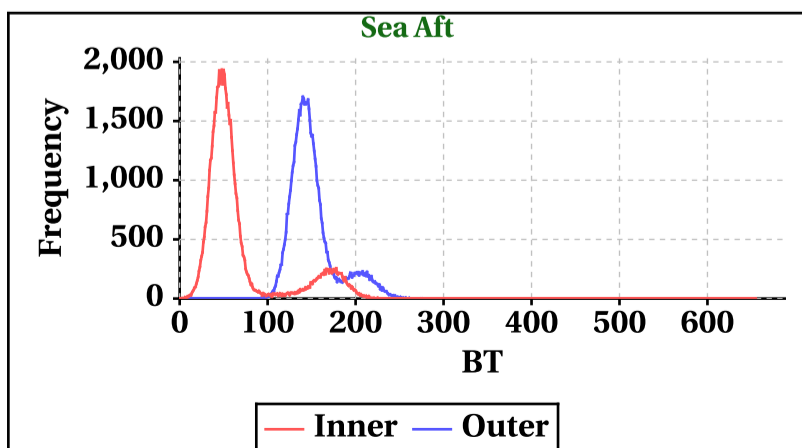
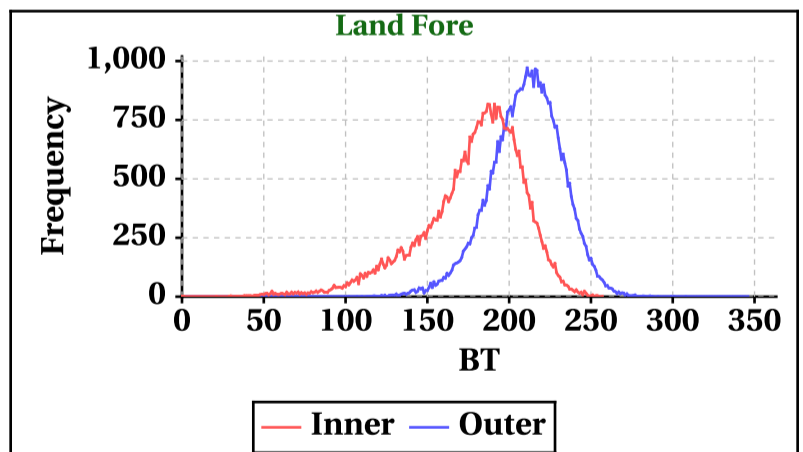
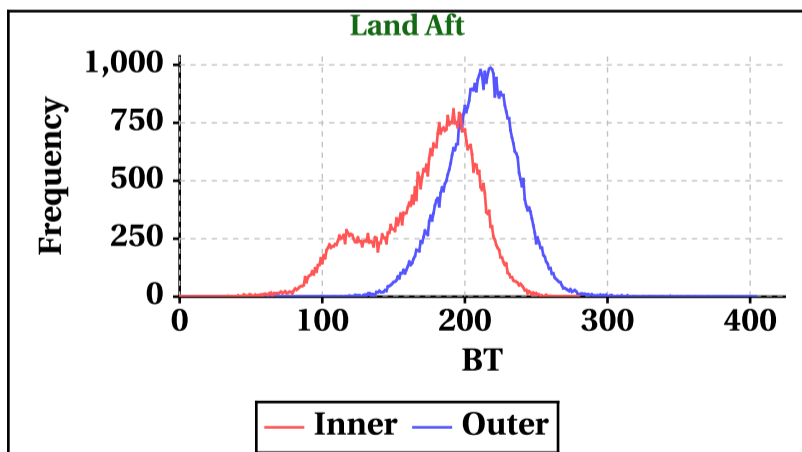
Outer Beam (VV)				
	Land Aft	Land Fore	Sea Aft	Sea Fore
Min	-32	-29	-61	-61
Max	0	0	0	0



## Brightness Temperature(K)

Inner Beam(HH)				
	Land Aft	Land Fore	Sea Aft	Sea Fore
Min	0	0	0	0
Max	280	257	655	655

Outer Beam(VV)				
	Land Aft	Land Fore	Sea Aft	Sea Fore
Min	0	0	0	0
Max	404	346	304	284

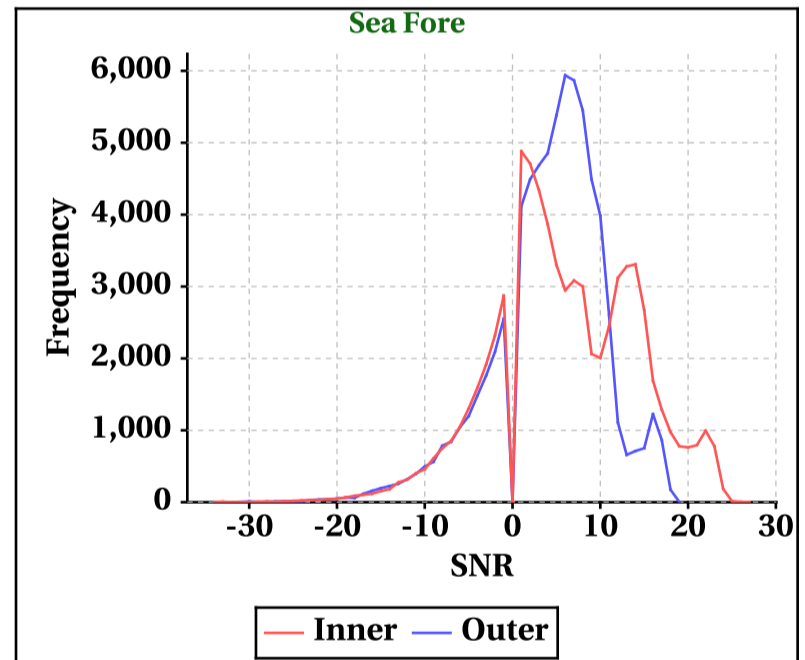
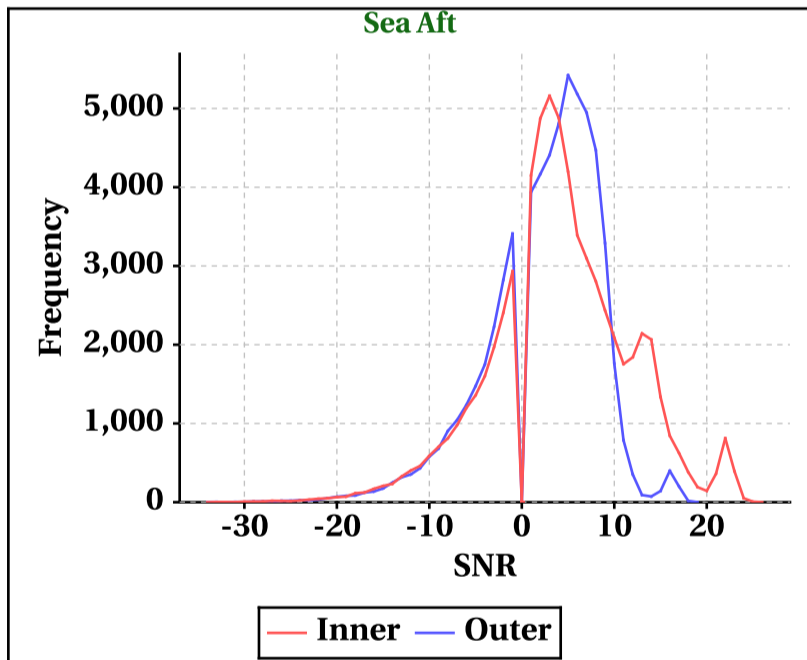
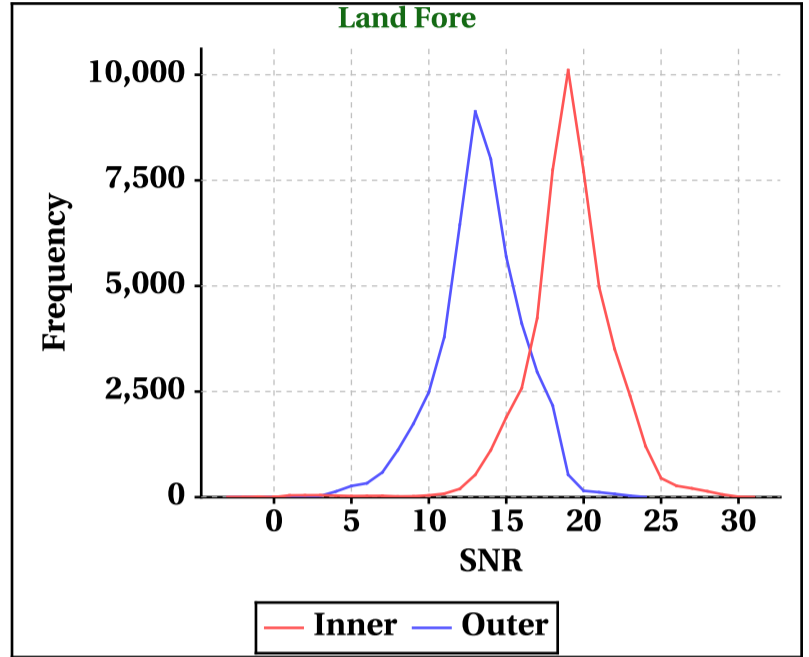
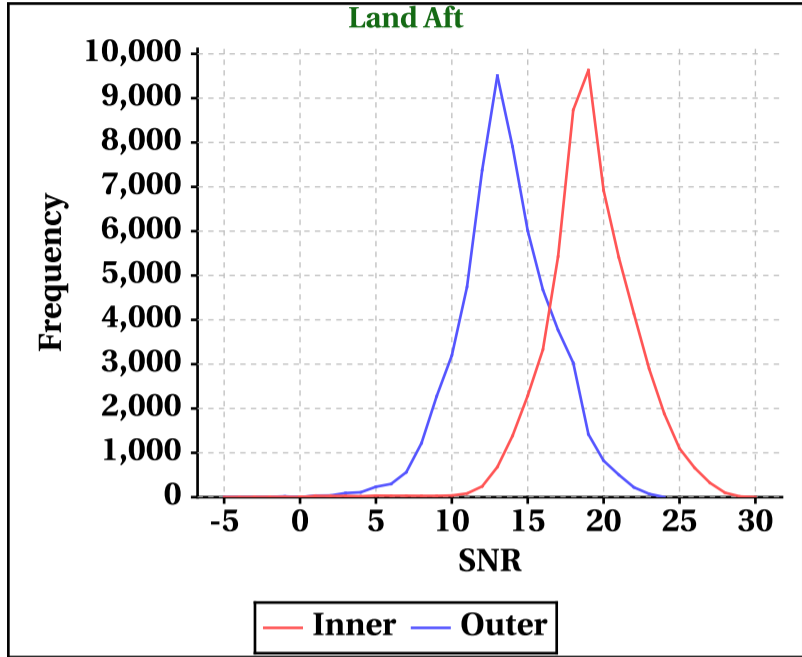


# Dynamic Range (Data Histograms)

## SNR(dBm)

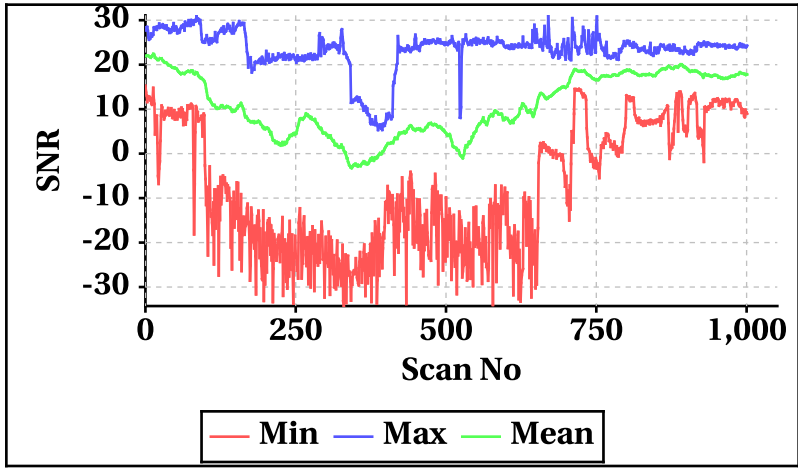
Inner Beam (HH)				
	Land Aft	Land Fore	Sea Aft	Sea Fore
Min	-5	-3	-34	-34
Max	30	31	26	27

Outer Beam (VV)				
	Land Aft	Land Fore	Sea Aft	Sea Fore
Min	-5	-3	-34	-34
Max	24	24	19	19

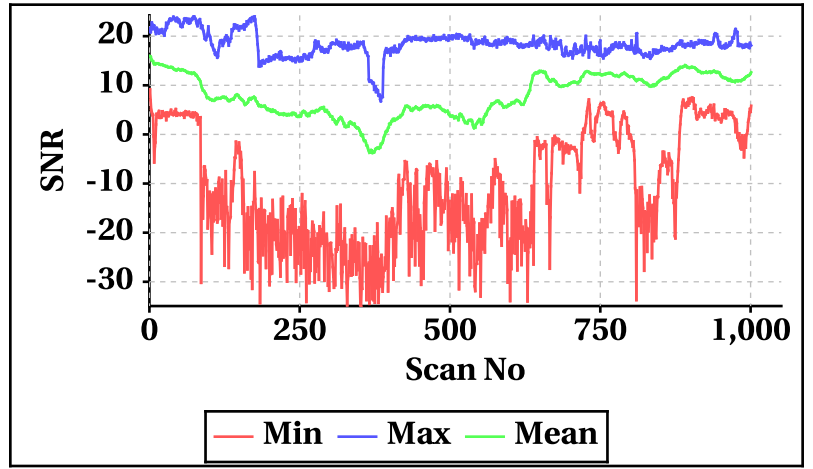


## Orbit-wise behaviour of SNR

**Inner Beam (HH)**

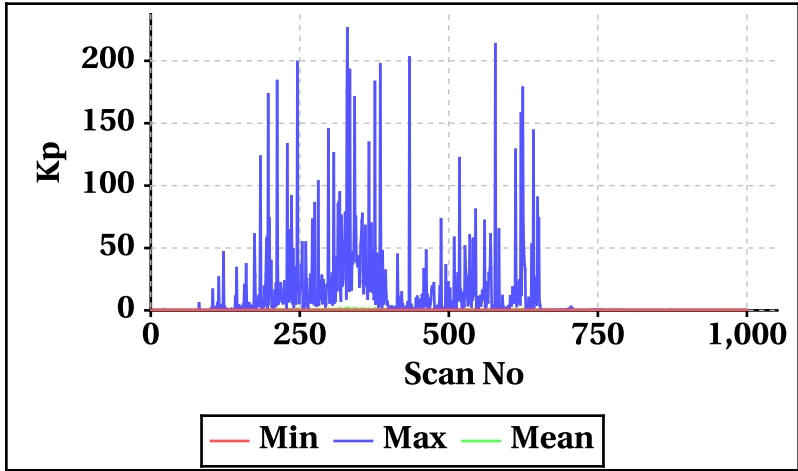


**Outer Beam(VV)**

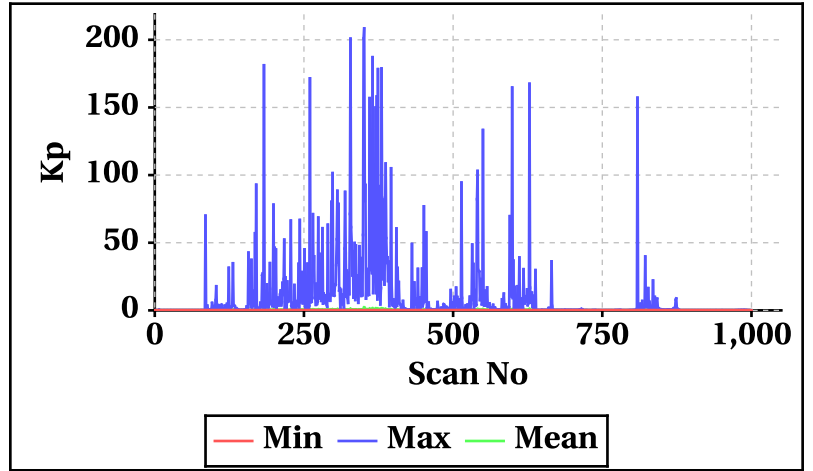


## Orbit-wise behaviour of Kp,Kpa,Kpb,Kpc

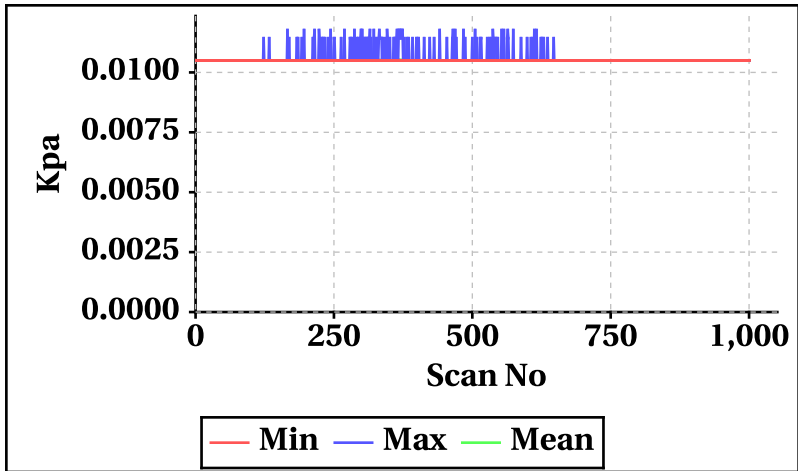
**Inner Beam(HH)**



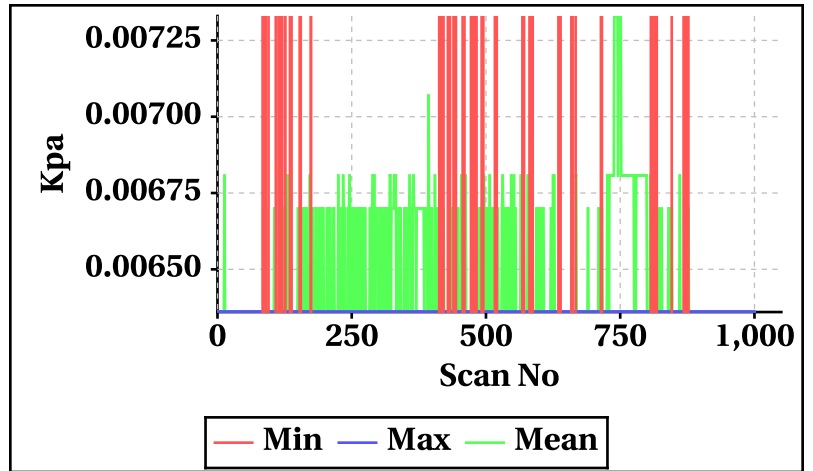
**Outer Beam(VV)**



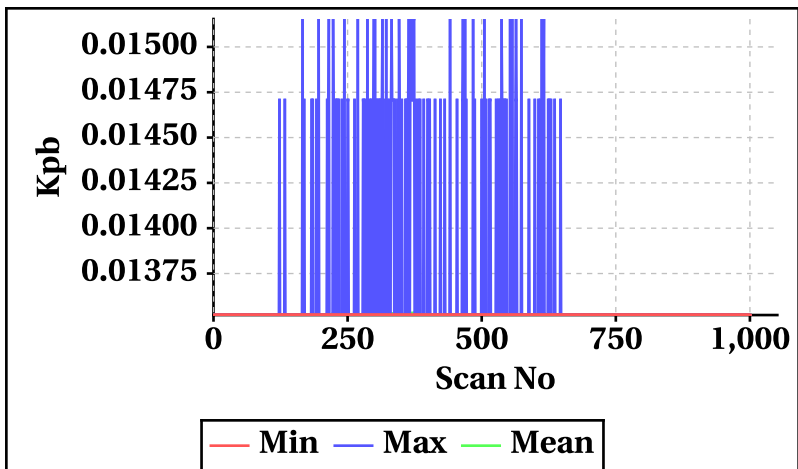
**Inner Beam(HH)**



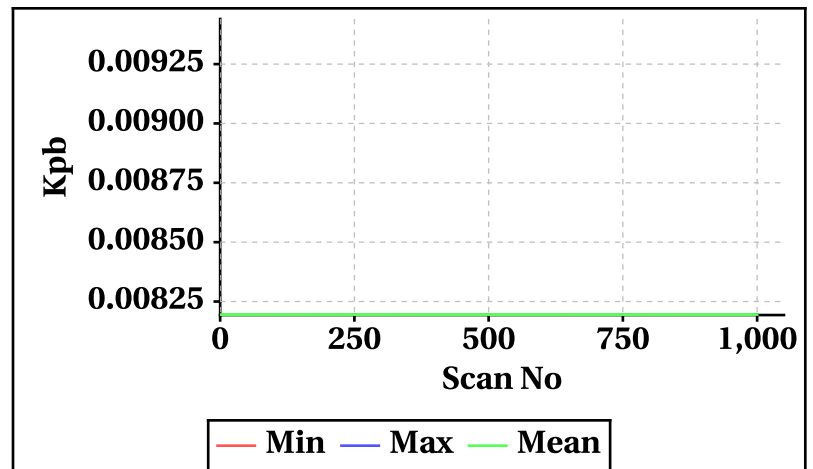
**Outer Beam(VV)**



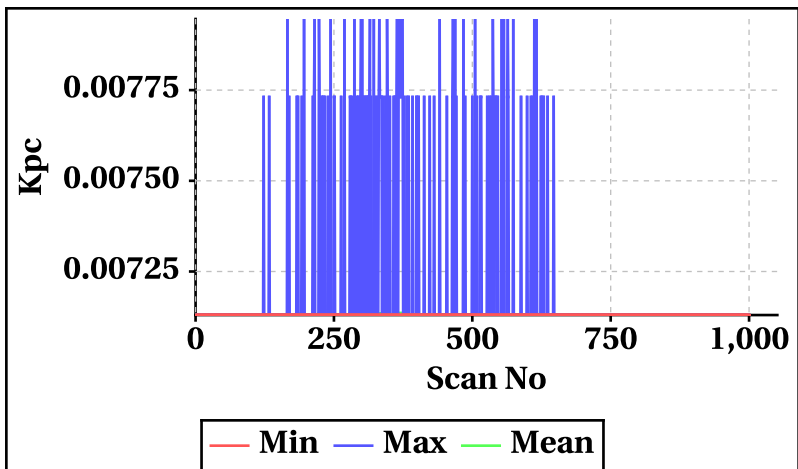
**Inner Beam(HH)**



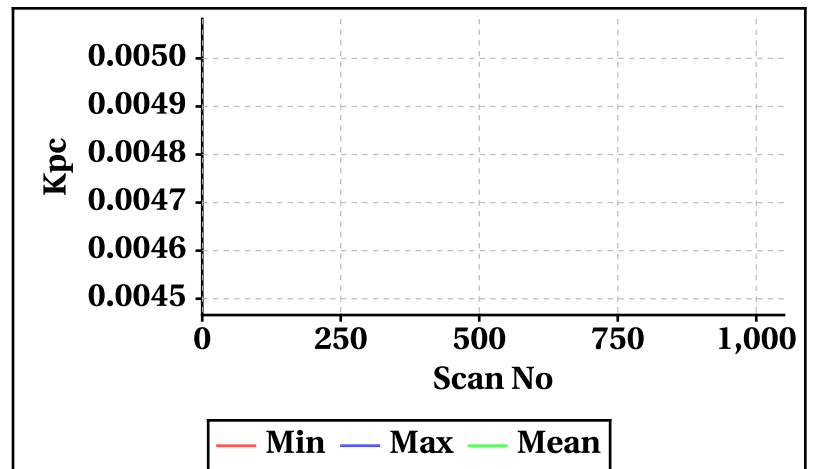
**Outer Beam(VV)**



**Inner Beam(HH)**

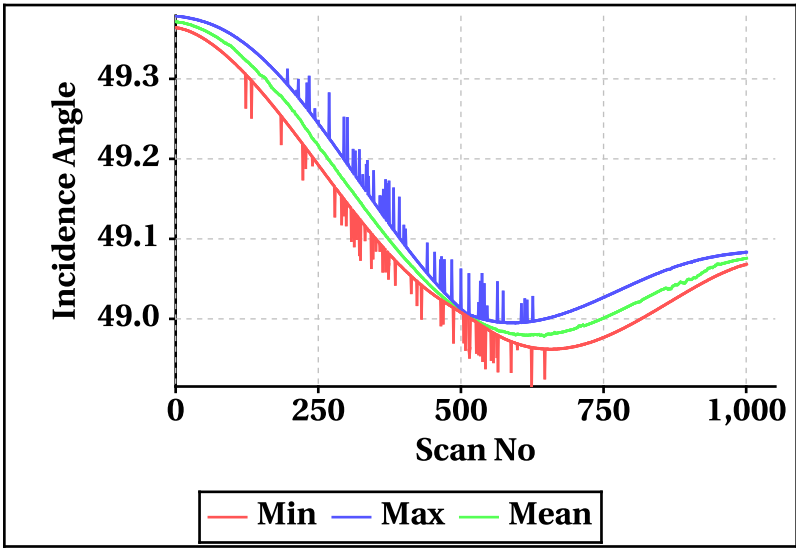


**Outer Beam(VV)**

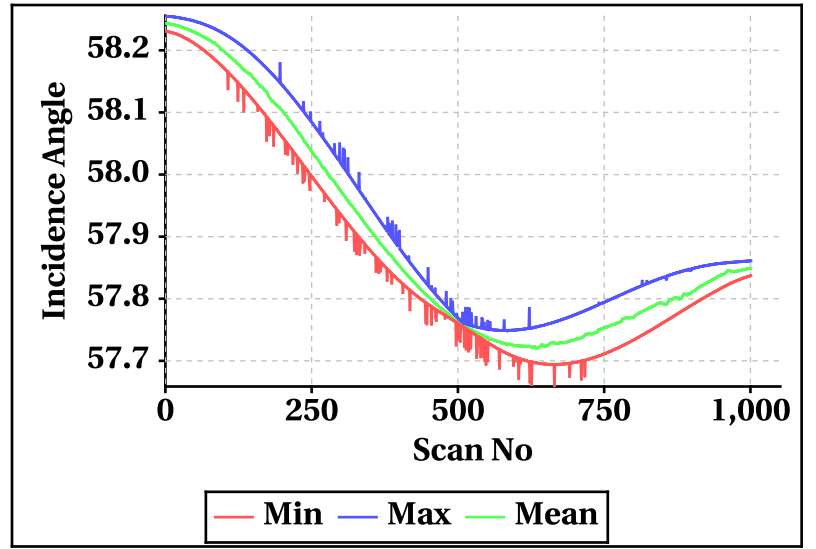


# Orbt-wise behaviour of Incidence,Azimuth,Range,X-Factor

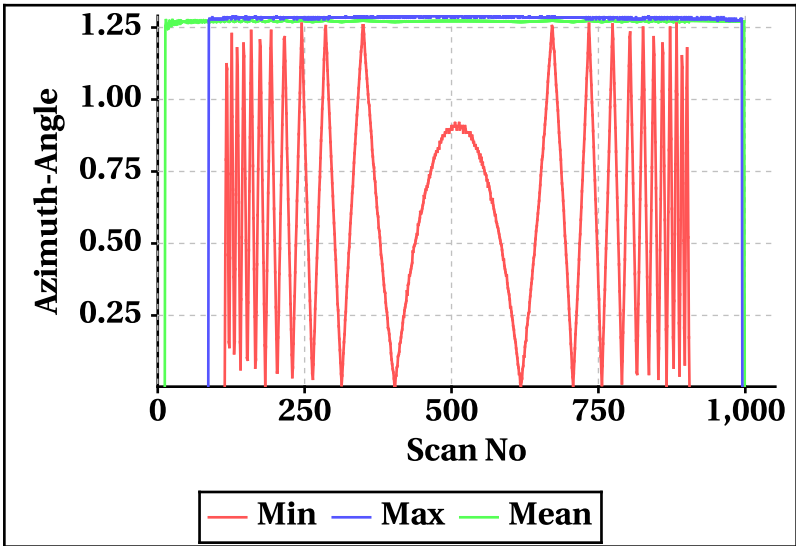
### Inner Beam (HH)



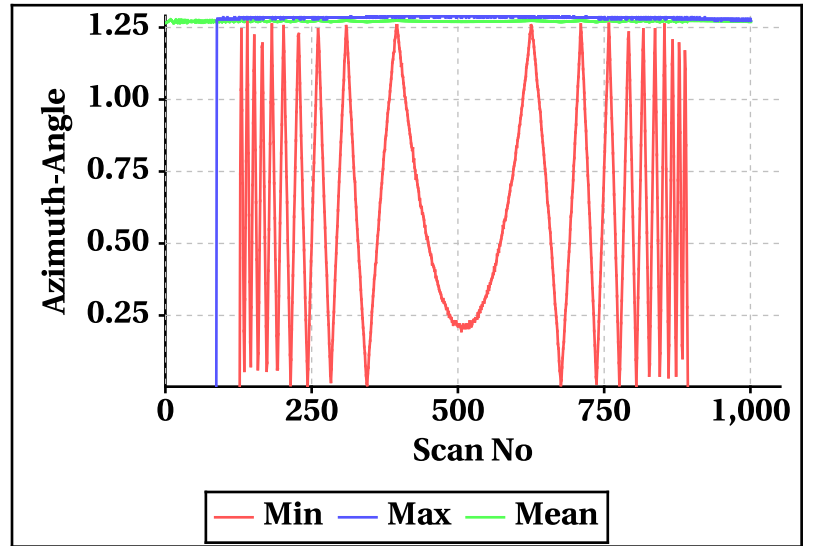
### Outer Beam(VV)



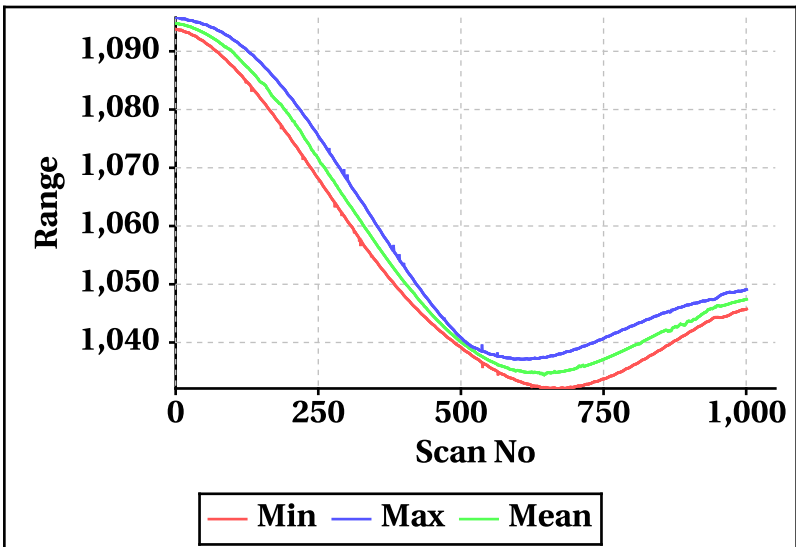
### Inner Beam (HH)



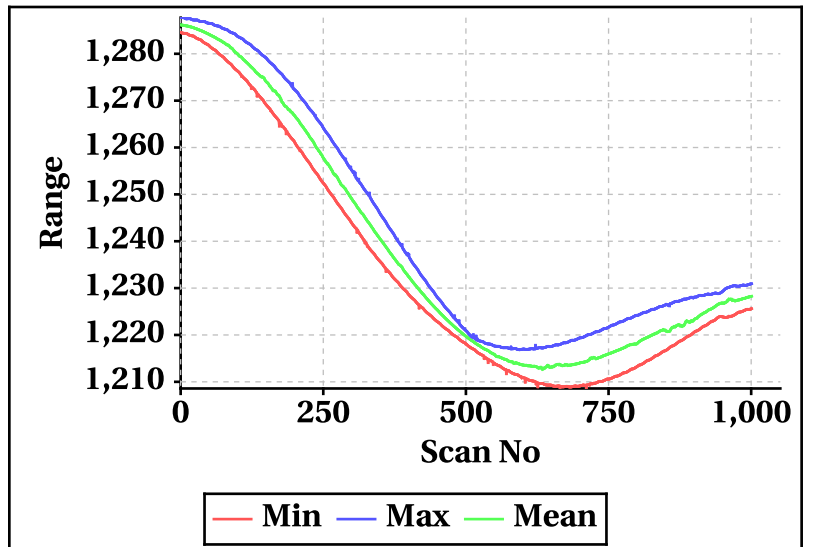
### Outer Beam(VV)



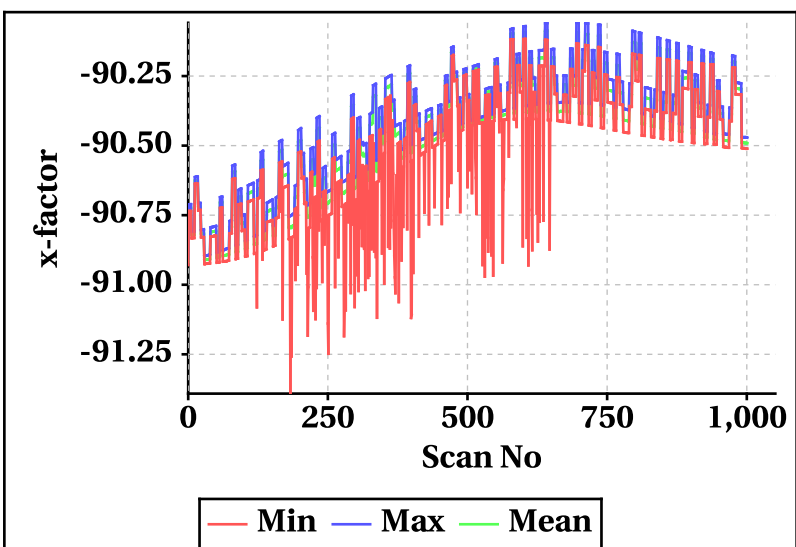
### Inner Beam (HH)



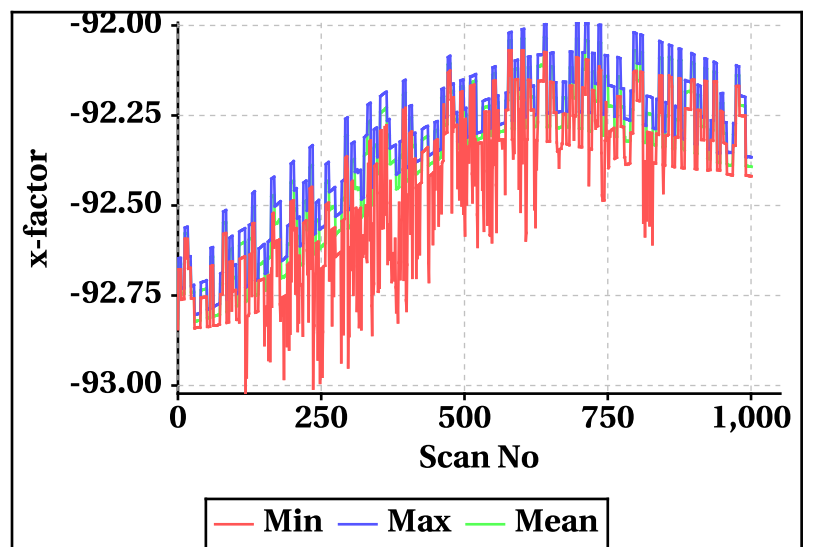
### Outer Beam(VV)



### Inner Beam (HH)



### Outer Beam(VV)



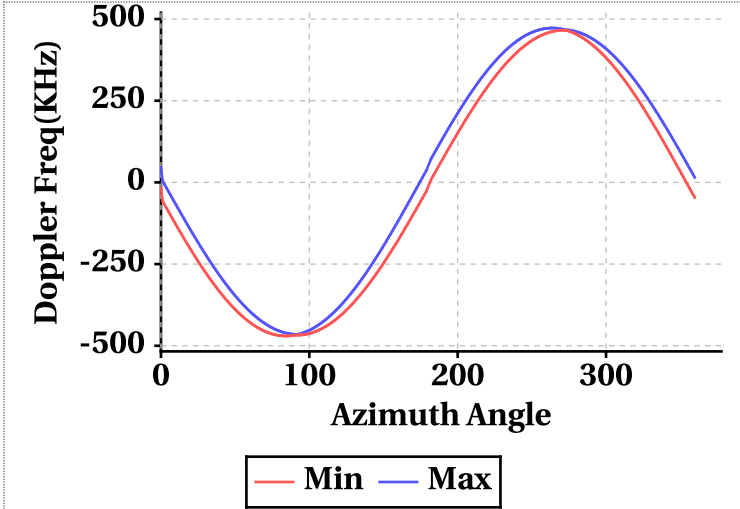


# Doppler Frequency Variation

Doppler Frequency(KHz) variation statistics Over the half Orbit

	Inner Beam (HH)	Outer Beam (VV)
Min	-470.12	-526.22
Max	472.40	528.26

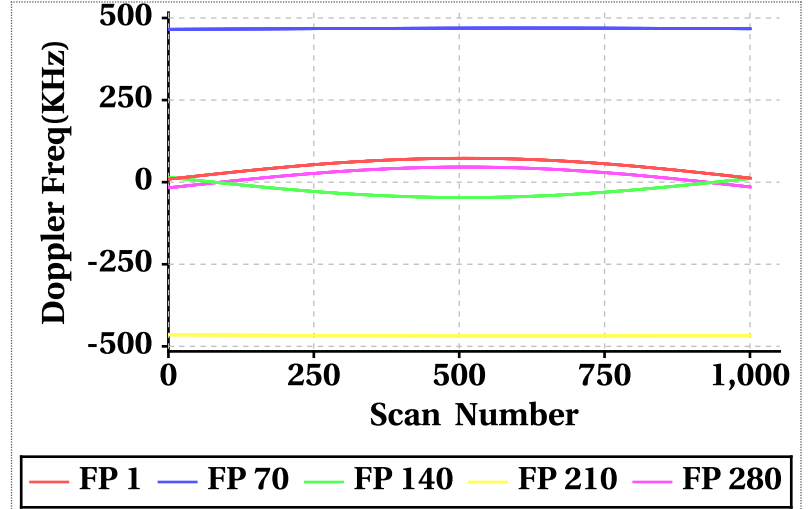
Footprint wise Doppler frequency variation Inner Beam (HH)



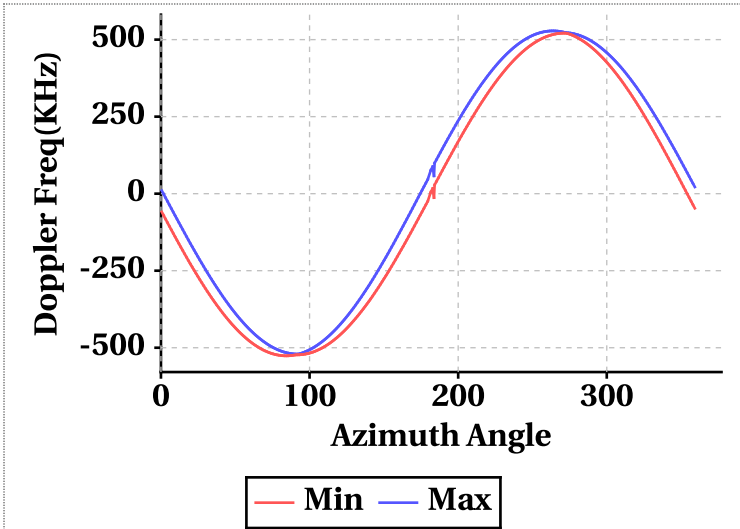
Doppler Frequency(KHz) variation

Doppler_FP	Inner Beam (HH)			Outer Beam (VV)		
	Min	Max	Mean	Min	Max	Mean
Doppler_1	9.20	72.80	50.21	5.14	76.06	50.90
Doppler_70	465.60	469.34	468.07	520.76	525.38	523.84
Doppler_140	-46.80	14.90	-25.01	-59.14	10.14	-34.64
Doppler_210	-468.42	-464.72	-467.38	-523.76	-520.24	-522.77
Doppler_280	-17.28	46.16	23.51	-12.90	57.88	32.63

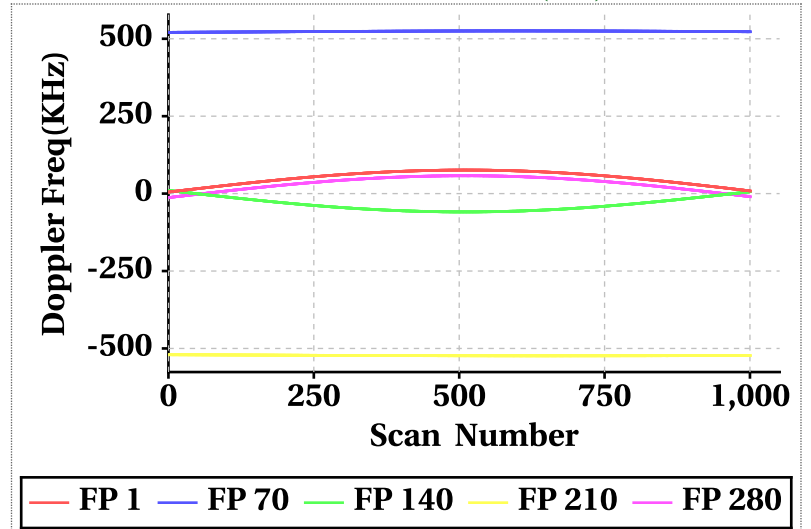
Doppler frequency variation at footprints: 1, 70, 140, 210 & 280 Inner Beam (HH)



Footprint wise Doppler frequency variation Outer Beam (VV)

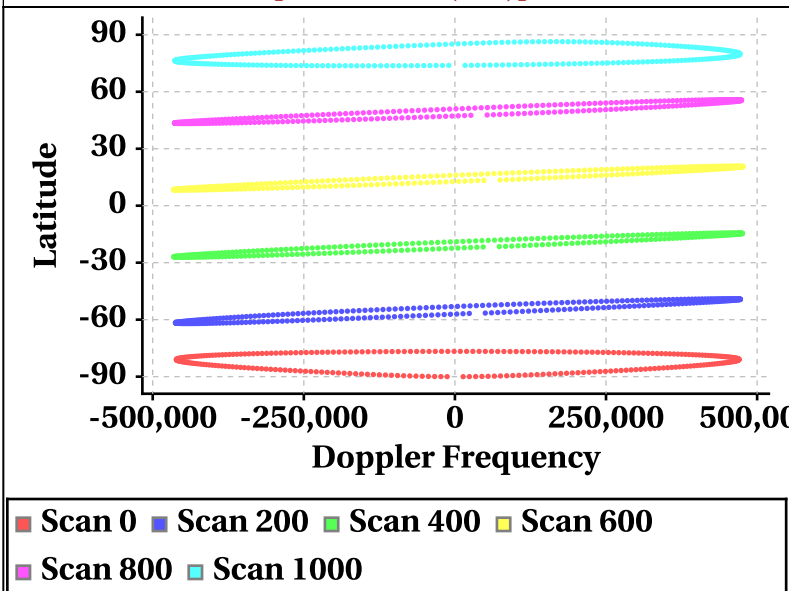


Doppler frequency variation at footprints: 1, 70, 140, 210 & 280 Outer Beam (VV)

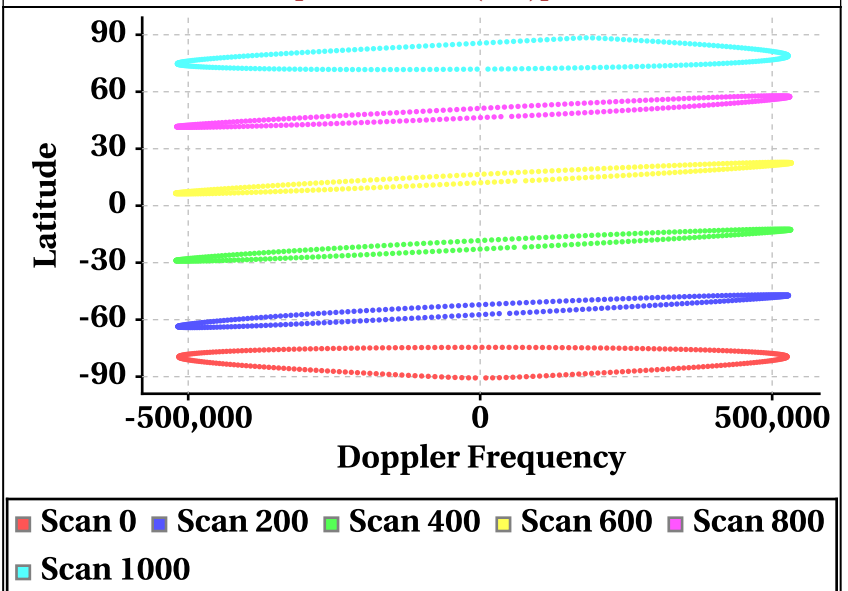


# Latitude Vs Doppler Frequency

Doppler Frequency at Scan Interval of 200 [Inner Beam(HH)]



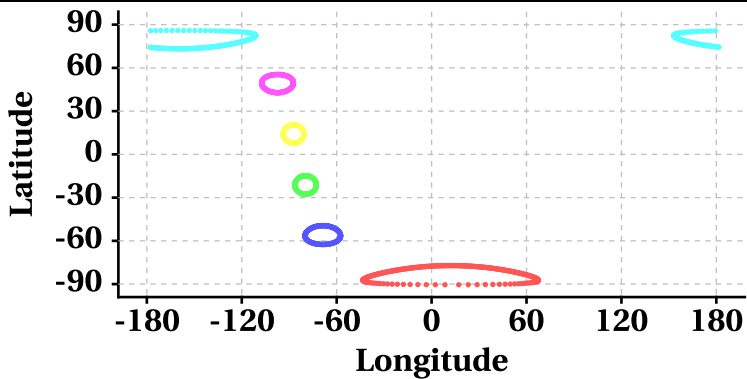
Doppler Frequency at Scan Interval of 200 [Outer Beam(VV)]



# Parameter as a function of Latitude

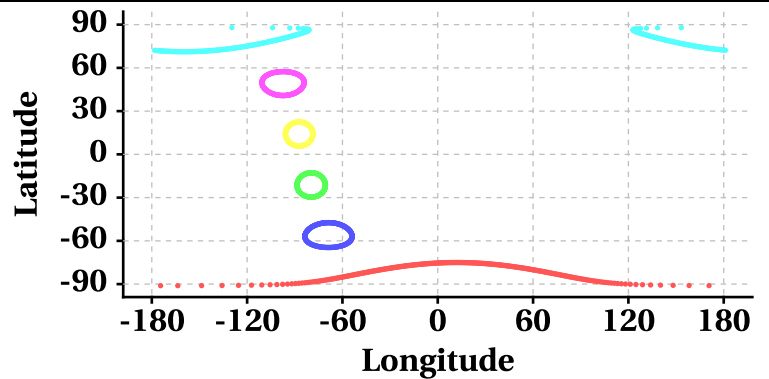
## Latitude Vs Longitude

Scan Trace [Inner Beam(HH)]



Scan 0 Scan 200 Scan 400 Scan 600  
Scan 800 Scan 1000

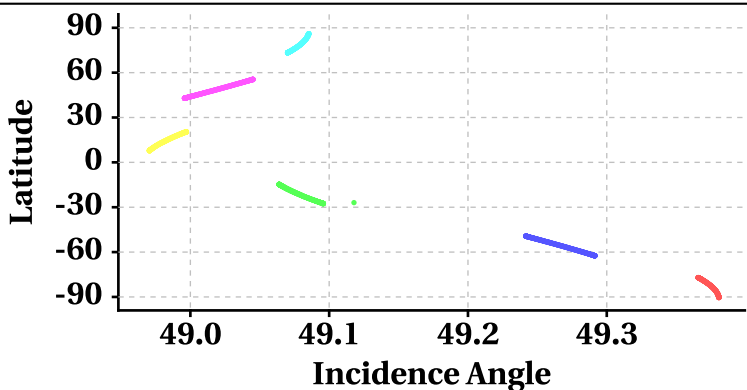
Scan Trace [Outer Beam (VV)]



Scan 0 Scan 200 Scan 400 Scan 600  
Scan 800 Scan 1000

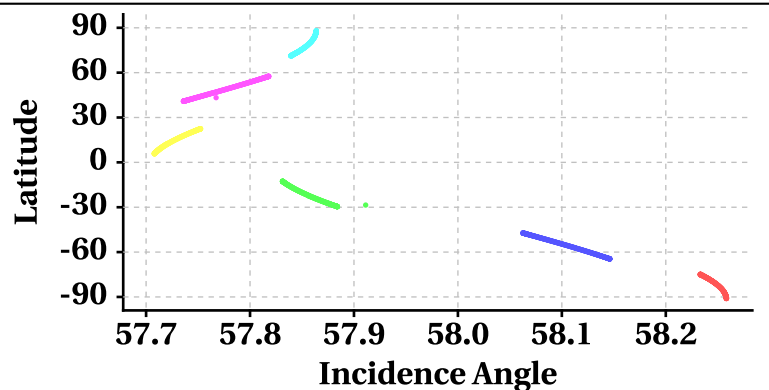
## Latitude Vs Incidence Angle

Incidence Angle at Scan Interval of 200 [Inner Beam(HH)]



Scan 0 Scan 200 Scan 400 Scan 600  
Scan 800 Scan 1000

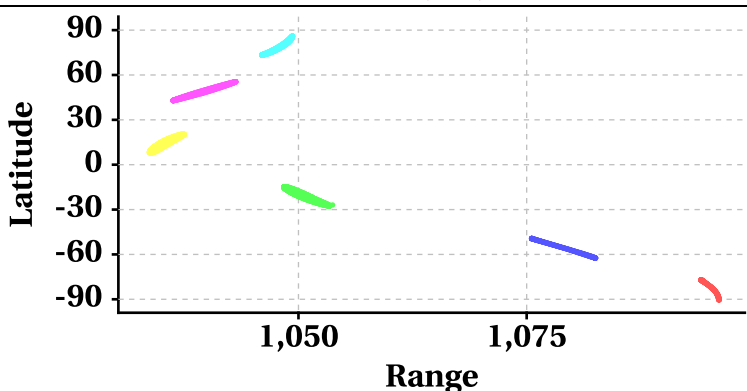
Incidence Angle at Scan Interval of 200 [Outer Beam (VV)]



Scan 0 Scan 200 Scan 400 Scan 600  
Scan 800 Scan 1000

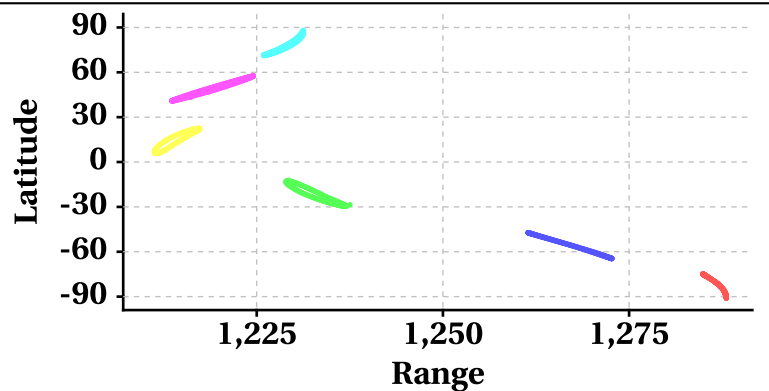
## Latitude Vs Range

Range at Scan Interval of 200 [Inner Beam(HH)]



Scan 0 Scan 200 Scan 400 Scan 600  
Scan 800 Scan 1000

Range at Scan Interval of 200 [Outer Beam(VV)]



Scan 0 Scan 200 Scan 400 Scan 600  
Scan 800 Scan 1000



# Variation in Orbit and Attitude Parameters

