

2006 Fynmeet Sea Clutter Measurement Trial

Dataset Overview for 25-Jul-2006

Dr PL Herselman

2006 Fynmeet Sea Clutter Measurement Trial : Dataset Overview for 25-Jul-2006

by Dr PL Herselman

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This document provides an overview for the datasets (or subset thereof) recorded on 25-Jul-2006 as part of the Fynmeet Sea Clutter Measurement Trial conducted at the Overberg Test Range at Arniston, South Africa. The trial was conducted over the period from 18 July to 4 August 2006. These datasets have been stored in structured Mathworks Matlab (*.mat) files and will be made available to research institutes or universities upon request. For more information contact Dr PL Herselman at pherselman@csir.co.za.

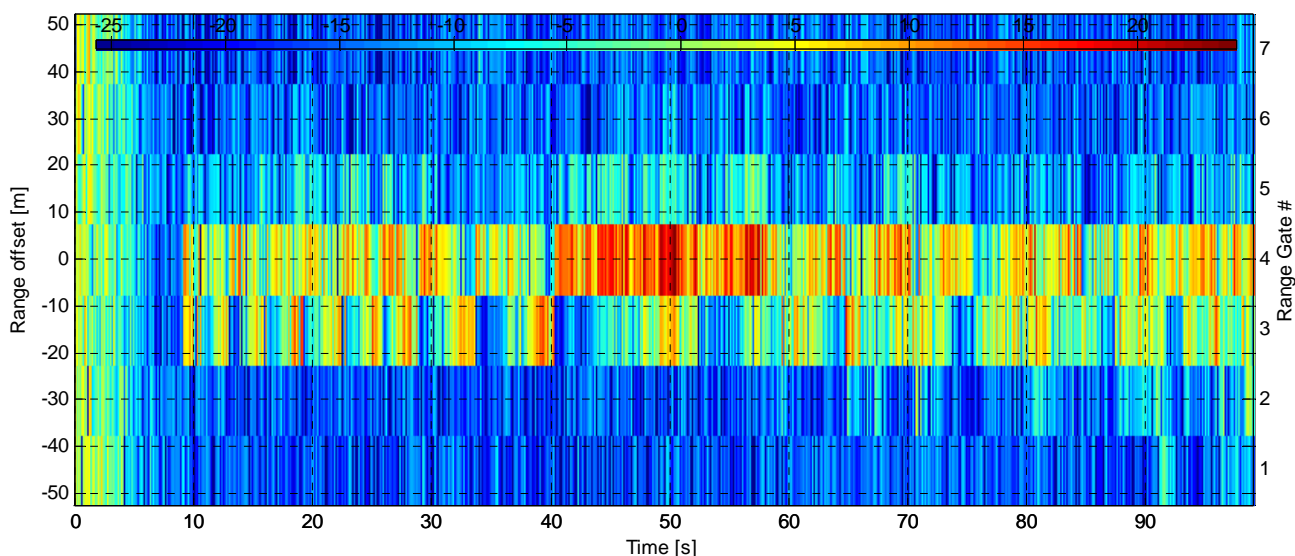
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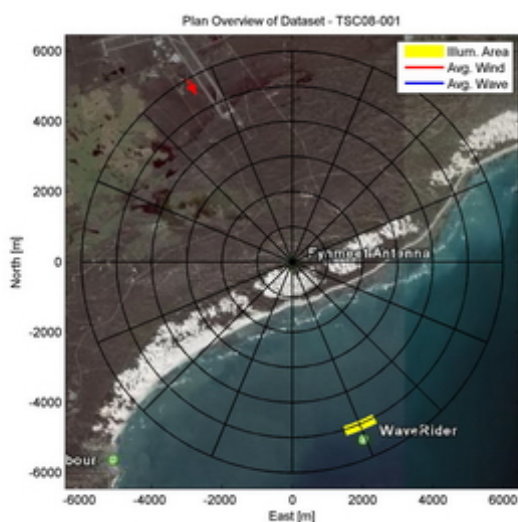
Dataset TSC08-001

RCS [dBm²] vs. time and range for $f_1 = 8.750$ GHz - TSC08-001

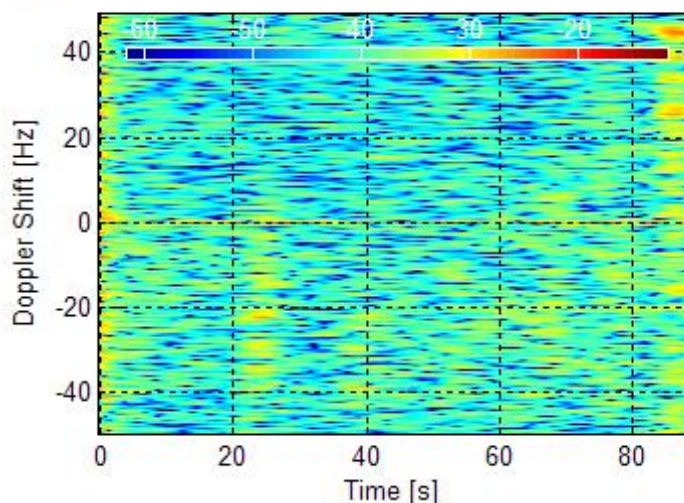


Experiment Summary	Value	Radar Setup	Value
Type	Target	Tx Frequency	9 GHz
Date	25-Jul-2006	PRF	10 kHz
Start Time	09:22:36.904	Tracking Range	4961.09 - 14340.6 m
Duration	990709 PRI's (99.0708 s)	Range Extend	105 m (7 gates), 15 m res.
Original File	PF060725.003	Waveform Type	Stepped Frequency
Original Path	\20060725_ifs	Waveform Bandwidth	495 MHz
Processor Version	FMSCP Ver 01.21	Waveform File	CAL_SRP_500_5.txt

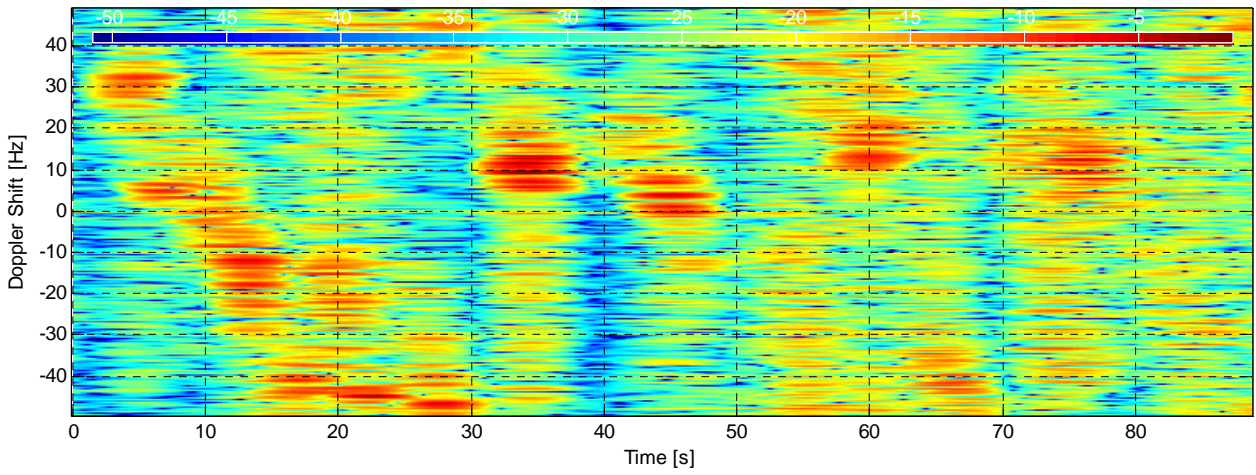
Environment	Value	Geometry	Value	Processing	Value
Inst. Wind	10.4 kts, 330.3 deg. N	Grazing Angle	0.725 - 0.756 deg.	Odd Gates Offset	Bypassed
Wind Gust	14.8 kts, 315 deg. N	Antenna Azm.	153 - 161.6 deg. N	Even Gates Offset	Bypassed
8hr Avg. Wind	4.3 kts, 335.2 deg. N	Antenna Elv.	-0.78 deg.	I/Q Imbalance	Bypassed
Wave (SWH)	NaN m, NaN deg. N	Antenna BW.	1.8 deg. Az, 1.8 deg. El	Complex Conj.	Applied
		GPS Data	Not available	Calibr. Coeff.	188.6 - 193.6 dB



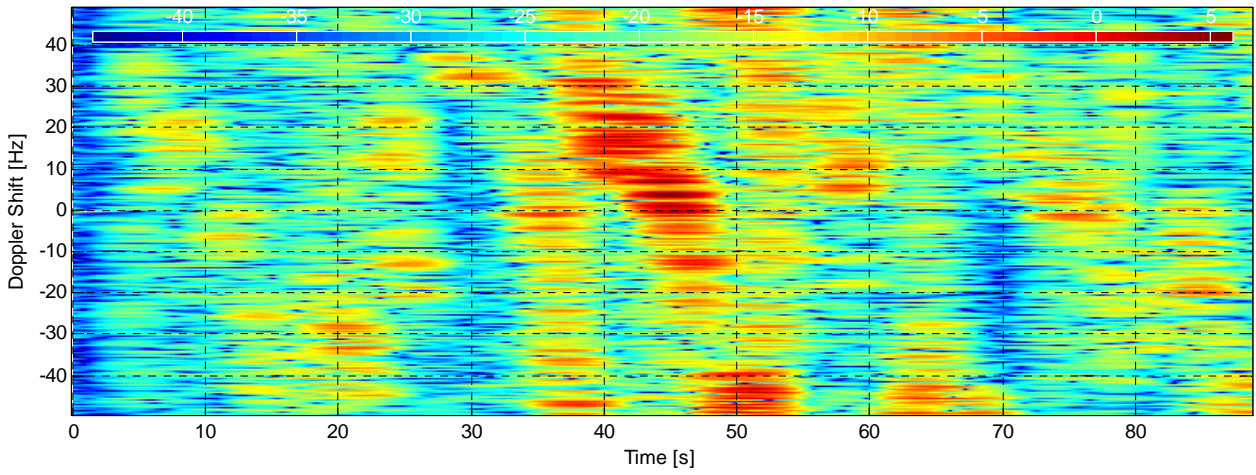
S [dBm².Hz⁻¹] at range -45 m (gate 1) for $f_1 = 8.750$ GHz - TSC08



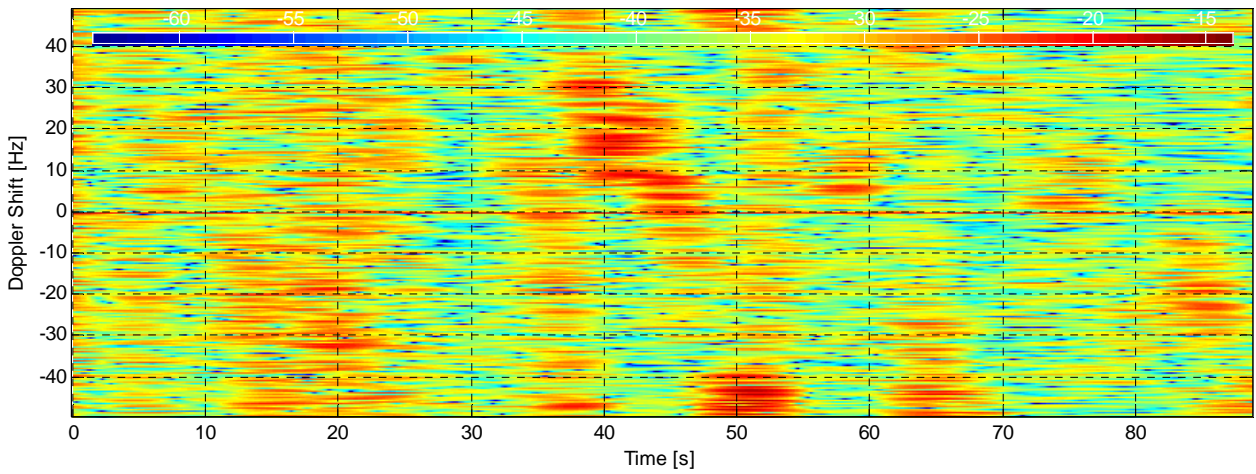
RCS [$\text{dBm}^2 \cdot \text{Hz}^{-1}$] at range -15 m (gate 3) for $f_1 = 8.750 \text{ GHz}$ - TSC08-001



RCS [$\text{dBm}^2 \cdot \text{Hz}^{-1}$] at range 0 m (gate 4) for $f_1 = 8.750 \text{ GHz}$ - TSC08-001

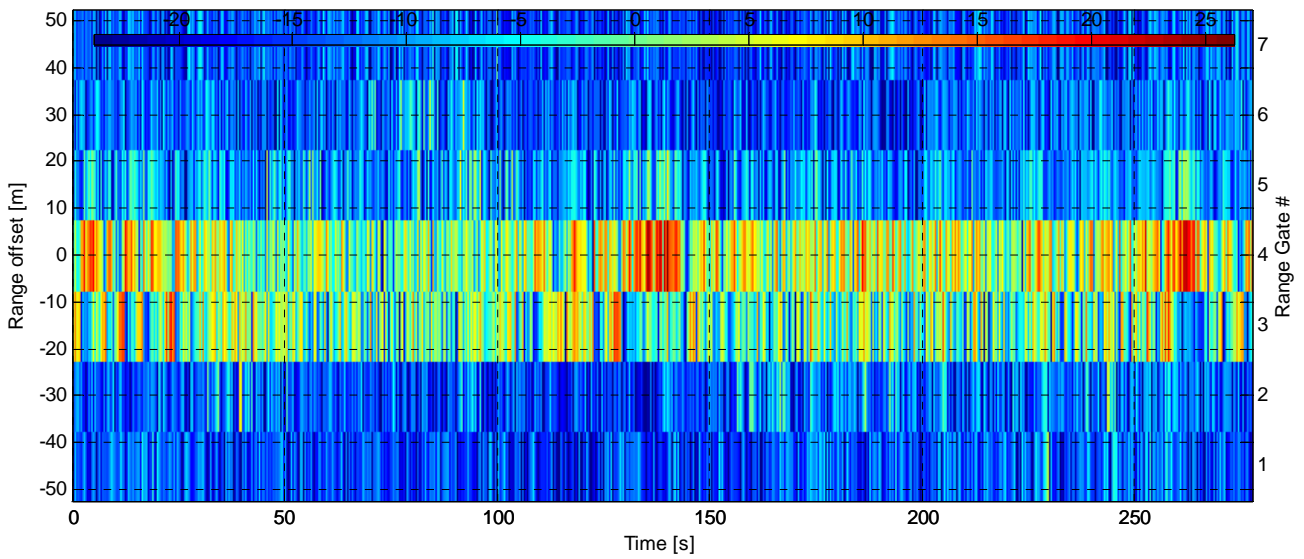


RCS [$\text{dBm}^2 \cdot \text{Hz}^{-1}$] at range 15 m (gate 5) for $f_1 = 8.750 \text{ GHz}$ - TSC08-001



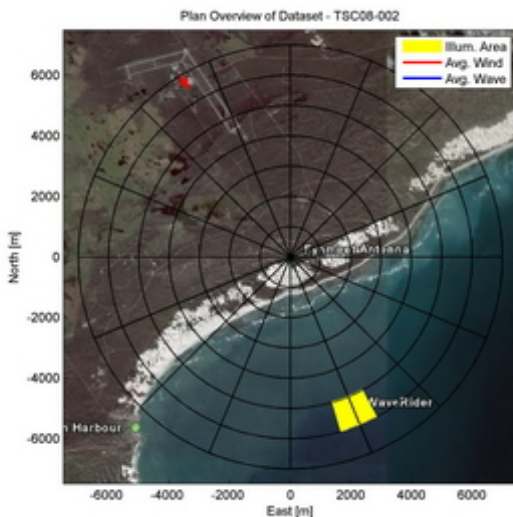
Dataset TSC08-002

RCS [dBm²] vs. time and range for $f_1 = 8.750$ GHz - TSC08-002

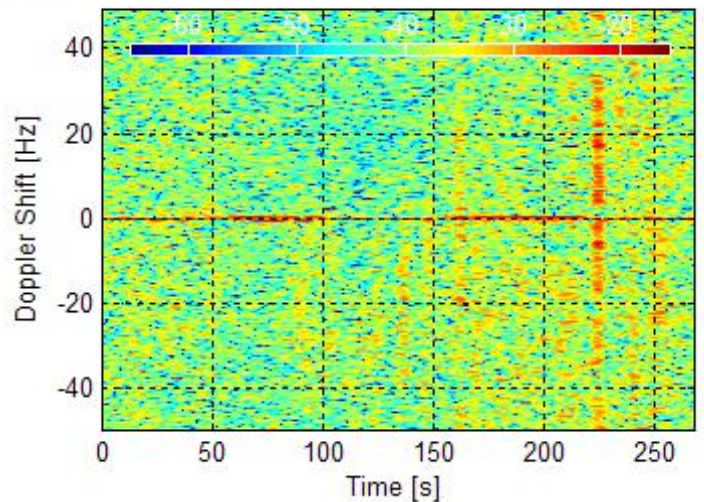


Experiment Summary	Value	Radar Setup	Value
Type	Target	Tx Frequency	9 GHz
Date	25-Jul-2006	PRF	10 kHz
Start Time	09:29:38.005	Tracking Range	5021.47 - 5954.88 m
Duration	2774672 PRI's (277.4671 s)	Range Extend	105 m (7 gates), 15 m res.
Original File	PF060725.004	Waveform Type	Stepped Frequency
Original Path	\20060725_ifs	Waveform Bandwidth	495 MHz
Processor Version	FMSCP Ver 01.21	Waveform File	CAL_SRP_500_5.txt

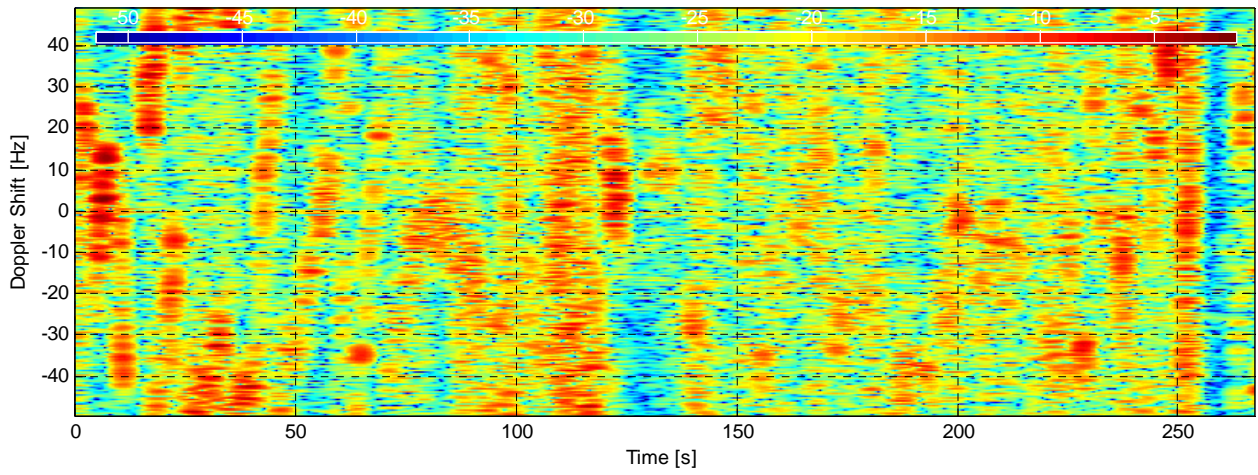
Environment	Value	Geometry	Value	Processing	Value
Inst. Wind	10.3 kts, 329.3 deg. N	Grazing Angle	0.62 - 0.648 deg.	Odd Gates Offset	Bypassed
Wind Gust	14.8 kts, 315 deg. N	Antenna Azm.	152.5 - 162.9 deg. N	Even Gates Offset	Bypassed
8hr Avg. Wind	4.39 kts, 334.9 deg. N	Antenna Elv.	-0.7306 deg.	I/Q Imbalance	Bypassed
Wave (SWH)	NaN m, NaN deg. N	Antenna BW.	1.8 deg. Az, 1.8 deg. El	Complex Conj.	Applied
		GPS Data	Not available	Calibr. Coeff.	188.6 - 193.6 dB



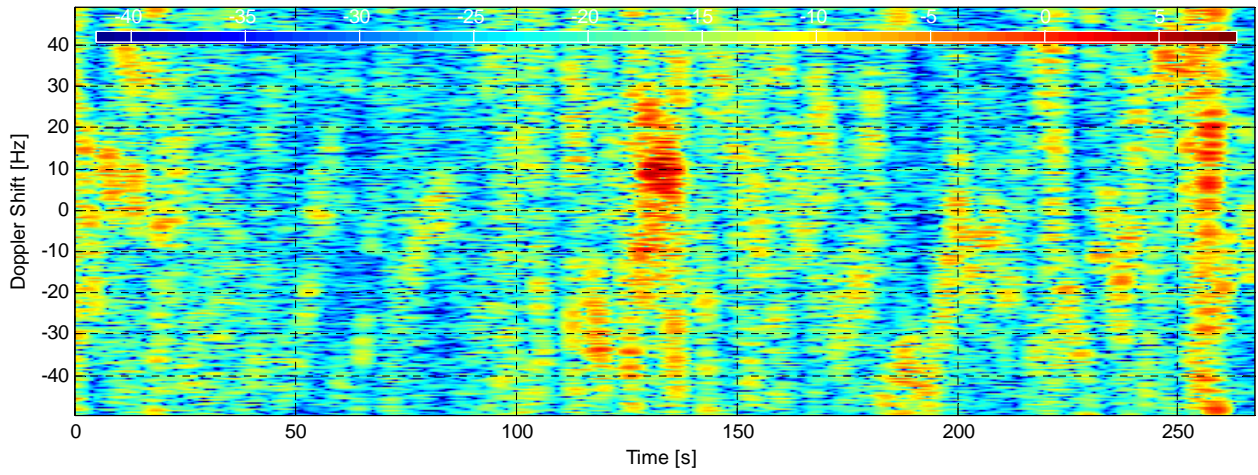
S [dBm².Hz⁻¹] at range -45 m (gate 1) for $f_1 = 8.750$ GHz - TSC08



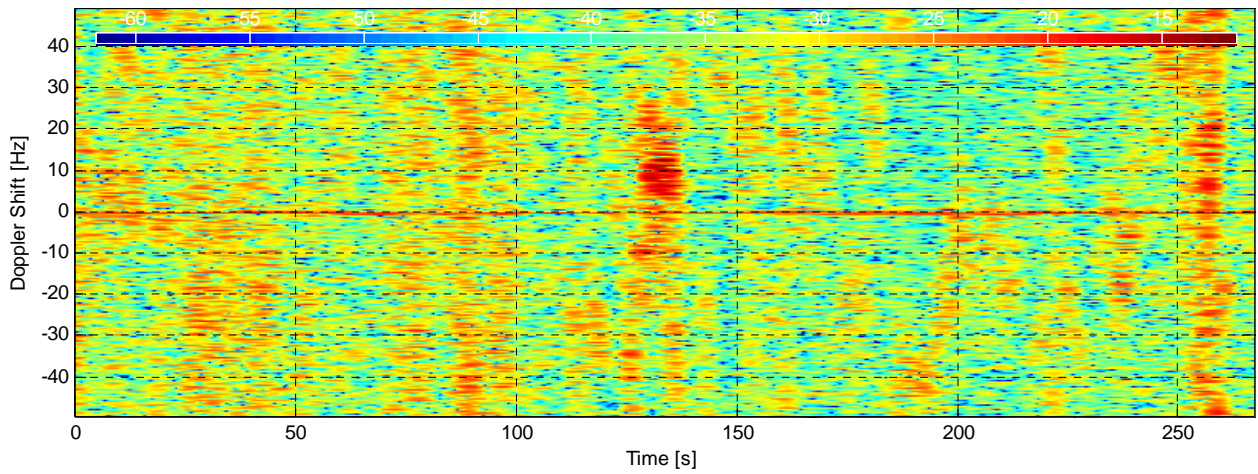
RCS [$\text{dBm}^2 \cdot \text{Hz}^{-1}$] at range -15 m (gate 3) for $f_1 = 8.750 \text{ GHz}$ - TSC08-002



RCS [$\text{dBm}^2 \cdot \text{Hz}^{-1}$] at range 0 m (gate 4) for $f_1 = 8.750 \text{ GHz}$ - TSC08-002

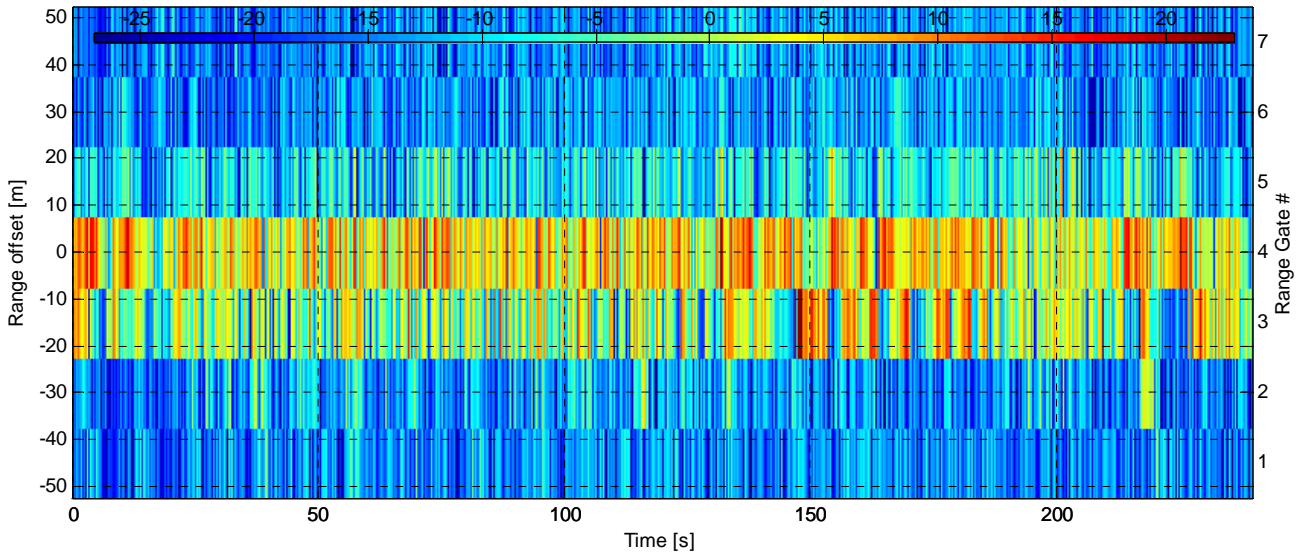


RCS [$\text{dBm}^2 \cdot \text{Hz}^{-1}$] at range 15 m (gate 5) for $f_1 = 8.750 \text{ GHz}$ - TSC08-002



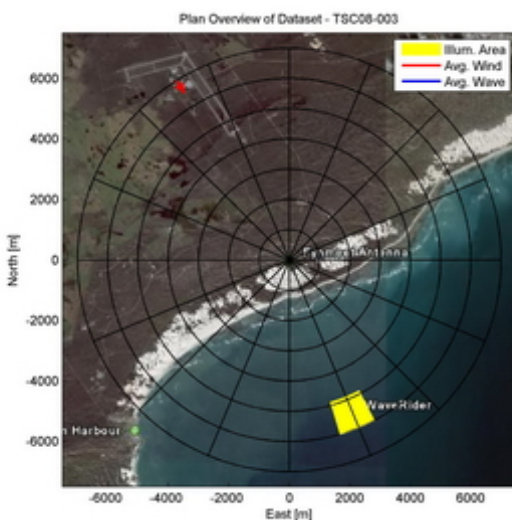
Dataset TSC08-003

RCS [dBm²] vs. time and range for $f_1 = 8.930$ GHz - TSC08-003

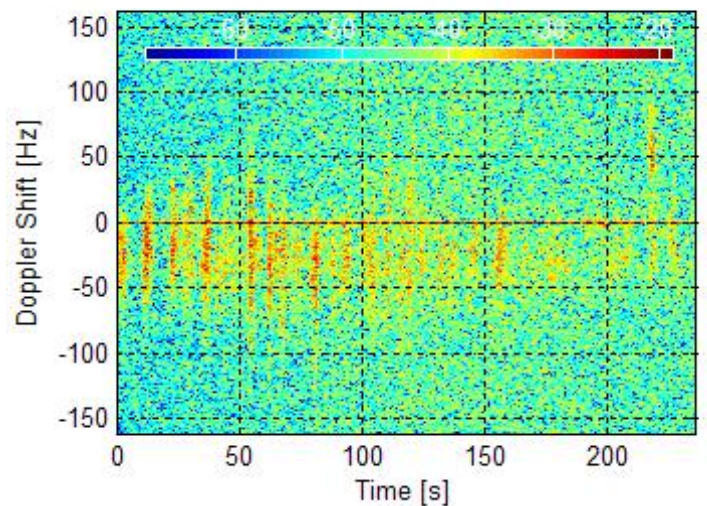


Experiment Summary	Value	Radar Setup	Value
Type	Target	Tx Frequency	9 GHz
Date	25-Jul-2006	PRF	10 kHz
Start Time	09:36:02.000	Tracking Range	4943.09 - 5960.25 m
Duration	2396734 PRI's (239.6733 s)	Range Extend	105 m (7 gates), 15 m res.
Original File	PF060725.005	Waveform Type	Stepped Frequency
Original Path	\20060725_ifs	Waveform Bandwidth	145 MHz
Processor Version	FMSCP Ver 01.21	Waveform File	SC_SRP_5M30P.txt

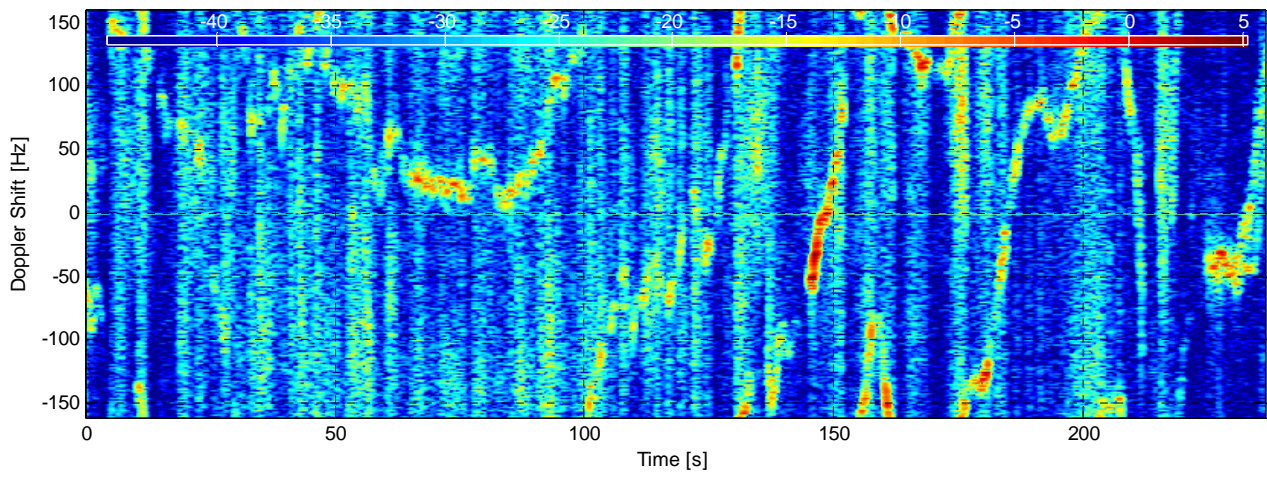
Environment	Value	Geometry	Value	Processing	Value
Inst. Wind	10.1 kts, 328.2 deg. N	Grazing Angle	0.648 - 0.66 deg.	Odd Gates Offset	Bypassed
Wind Gust	14.8 kts, 315 deg. N	Antenna Azm.	152.9 - 162.9 deg. N	Even Gates Offset	Bypassed
8hr Avg. Wind	4.49 kts, 334.7 deg. N	Antenna Elv.	-0.7224 deg.	I/Q Imbalance	Bypassed
Wave (SWH)	NaN m, NaN deg. N	Antenna BW.	1.8 deg. Az, 1.8 deg. El	Complex Conj.	Applied
		GPS Data	Not available	Calibr. Coeff.	189 - 193.1 dB



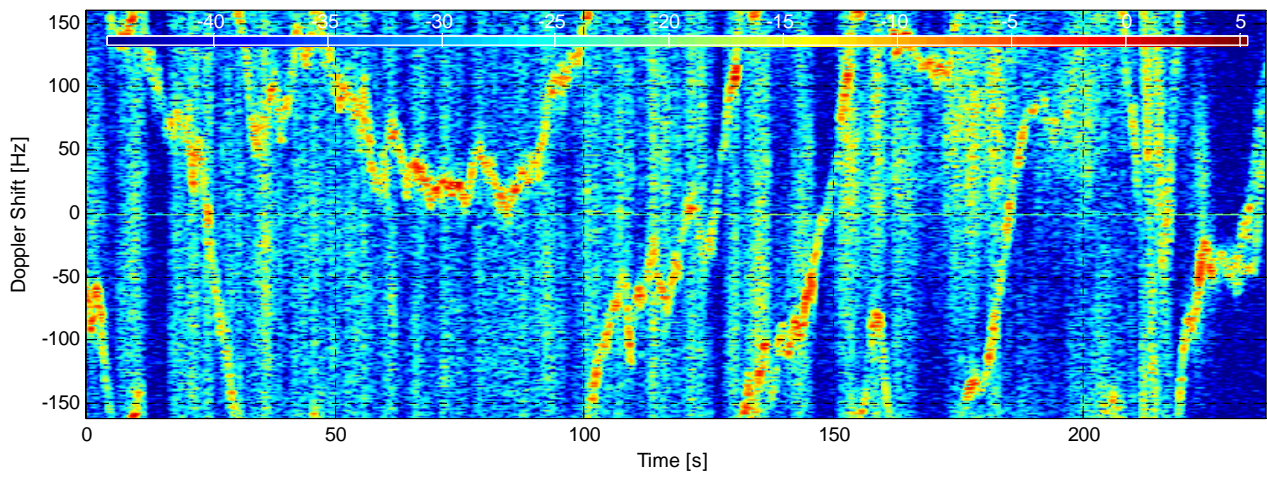
σ_S [dBm².Hz⁻¹] at range -45 m (gate 1) for $f_1 = 8.930$ GHz - TSC08-003



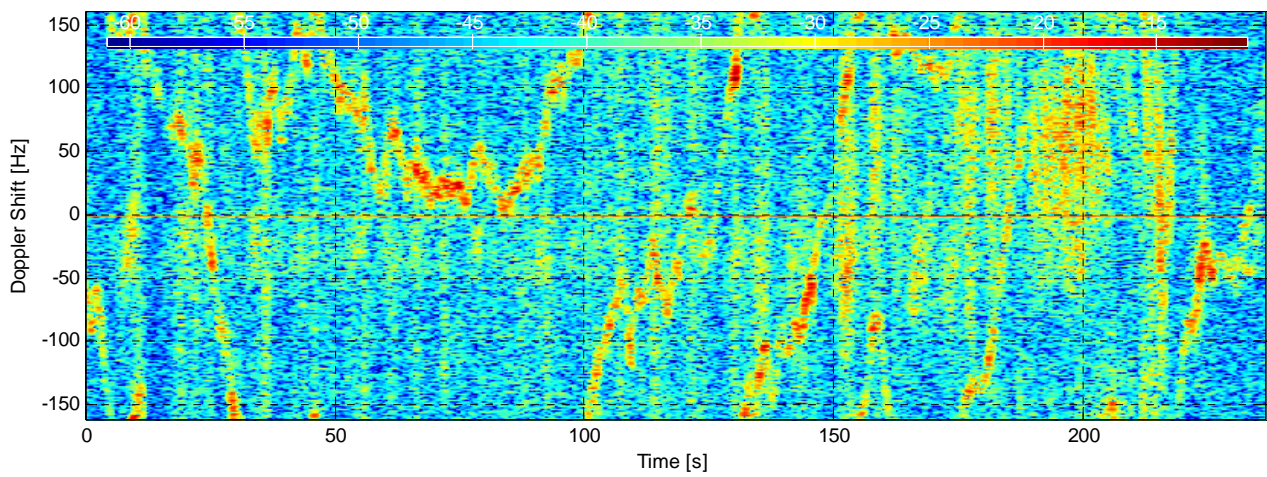
RCS [dBm².Hz⁻¹] at range -15 m (gate 3) for $f_1 = 8.930$ GHz - TSC08-003



RCS [dBm².Hz⁻¹] at range 0 m (gate 4) for $f_1 = 8.930$ GHz - TSC08-003

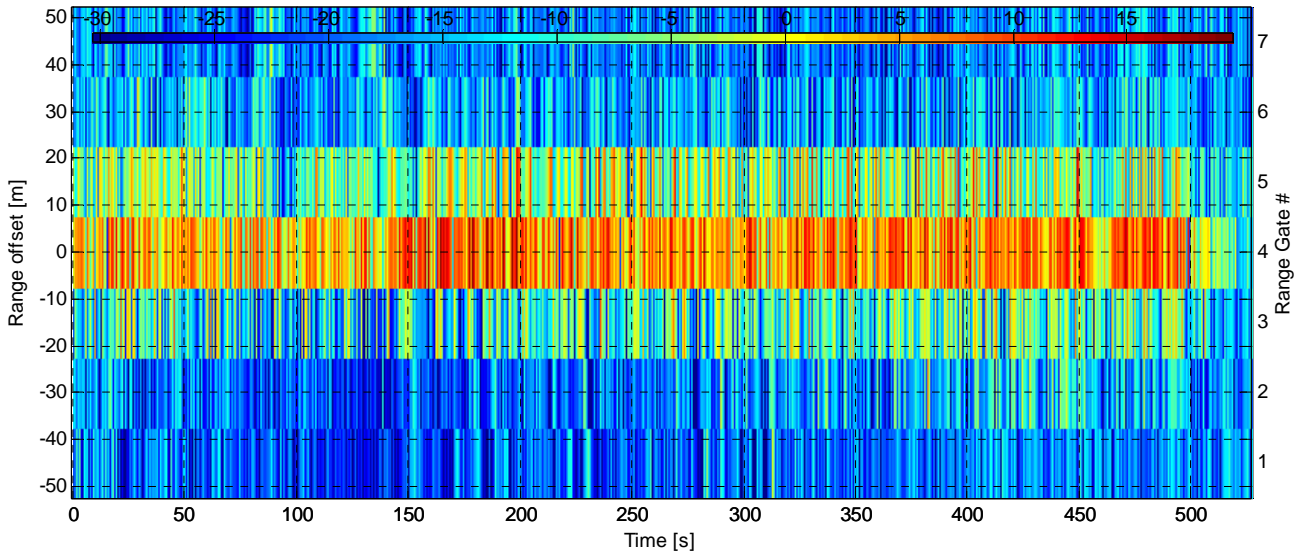


RCS [dBm².Hz⁻¹] at range 15 m (gate 5) for $f_1 = 8.930$ GHz - TSC08-003



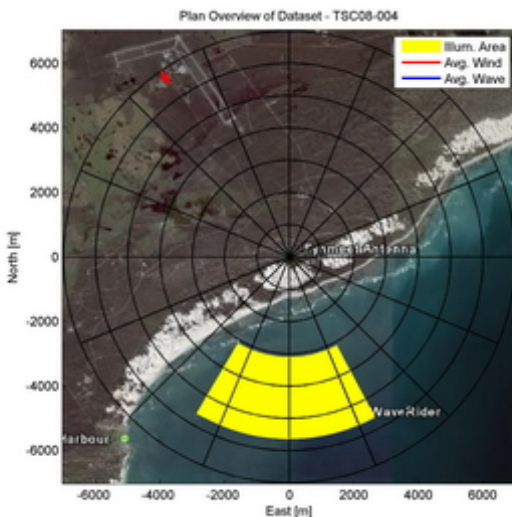
Dataset TSC08-004

RCS [dBm²] vs. time and range for $f_1 = 8.930$ GHz - TSC08-004

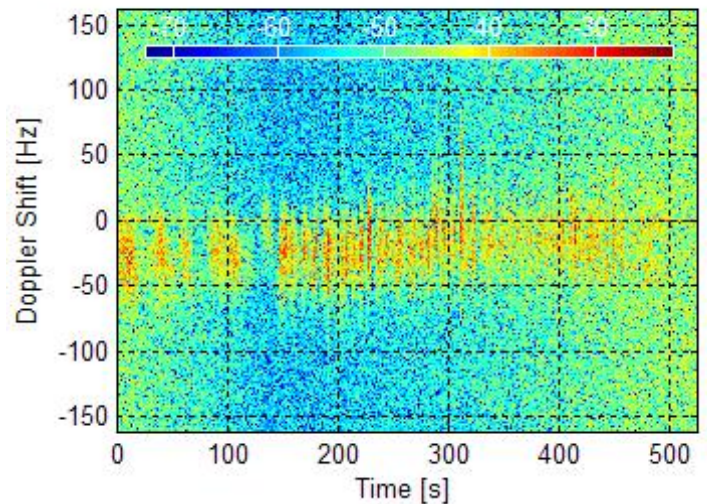


Experiment Summary	Value	Radar Setup	Value
Type	Target	Tx Frequency	9 GHz
Date	25-Jul-2006	PRF	10 kHz
Start Time	09:54:04.001	Tracking Range	3159.81 - 5588.19 m
Duration	5270372 PRI's (527.0371 s)	Range Extend	105 m (7 gates), 15 m res.
Original File	PF060725.007	Waveform Type	Stepped Frequency
Original Path	\20060725_ifs	Waveform Bandwidth	145 MHz
Processor Version	FMSCP Ver 01.21	Waveform File	SC_SRP_5M30P.txt

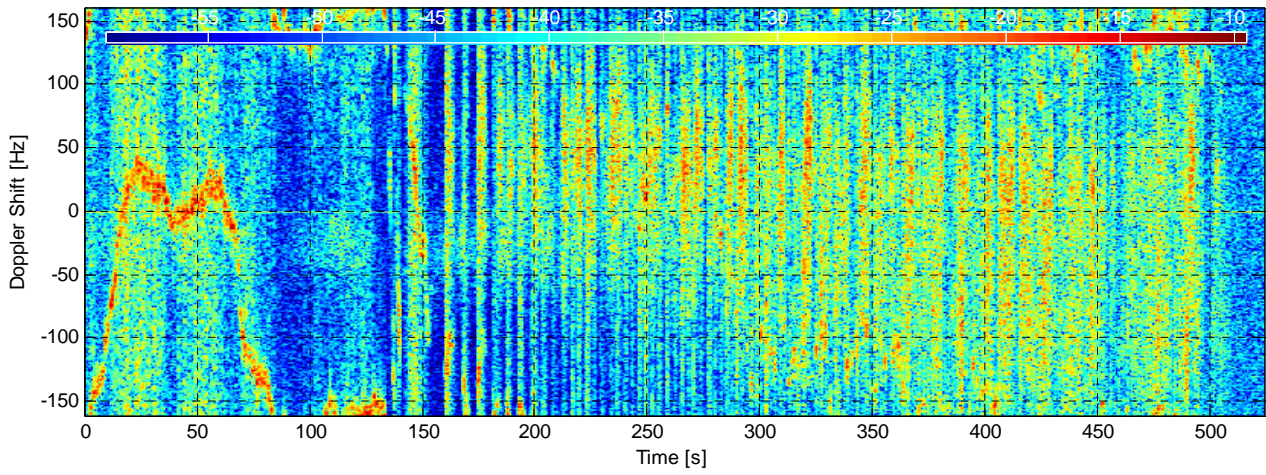
Environment	Value	Geometry	Value	Processing	Value
Inst. Wind	9.59 kts, 325.8 deg. N	Grazing Angle	0.663 - 0.753 deg.	Odd Gates Offset	Bypassed
Wind Gust	14.8 kts, 315 deg. N	Antenna Azm.	152.9 - 209.7 deg. N	Even Gates Offset	Bypassed
8hr Avg. Wind	4.72 kts, 334 deg. N	Antenna Elv.	-1.241 - 0.39 deg.	I/Q Imbalance	Bypassed
Wave (SWH)	NaN m, NaN deg. N	Antenna BW.	1.8 deg. Az, 1.8 deg. El	Complex Conj.	Applied
		GPS Data	Not available	Calibr. Coeff.	189 - 193.1 dB



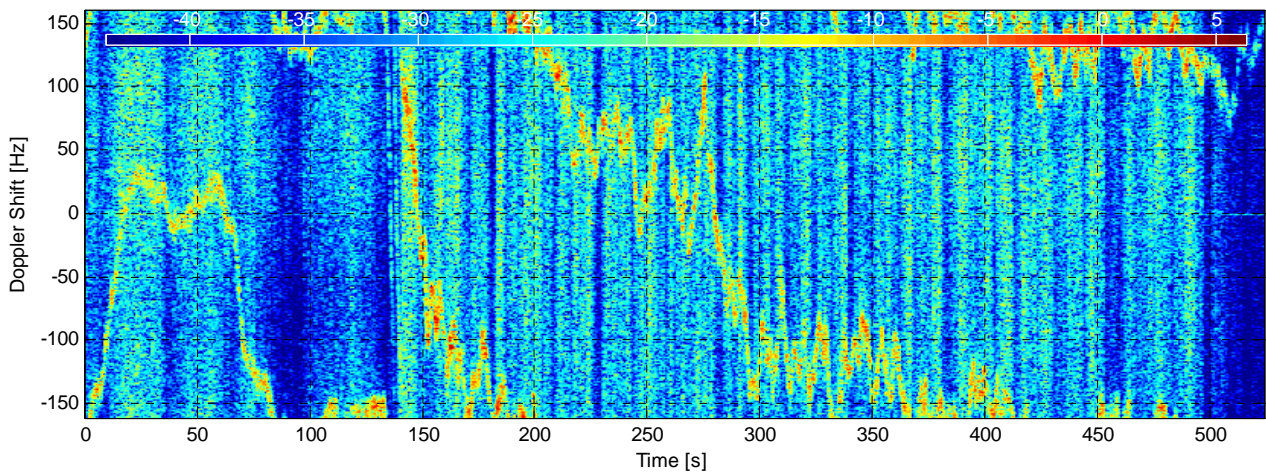
σ_S [dBm².Hz⁻¹] at range -45 m (gate 1) for $f_1 = 8.930$ GHz - TSC08-004



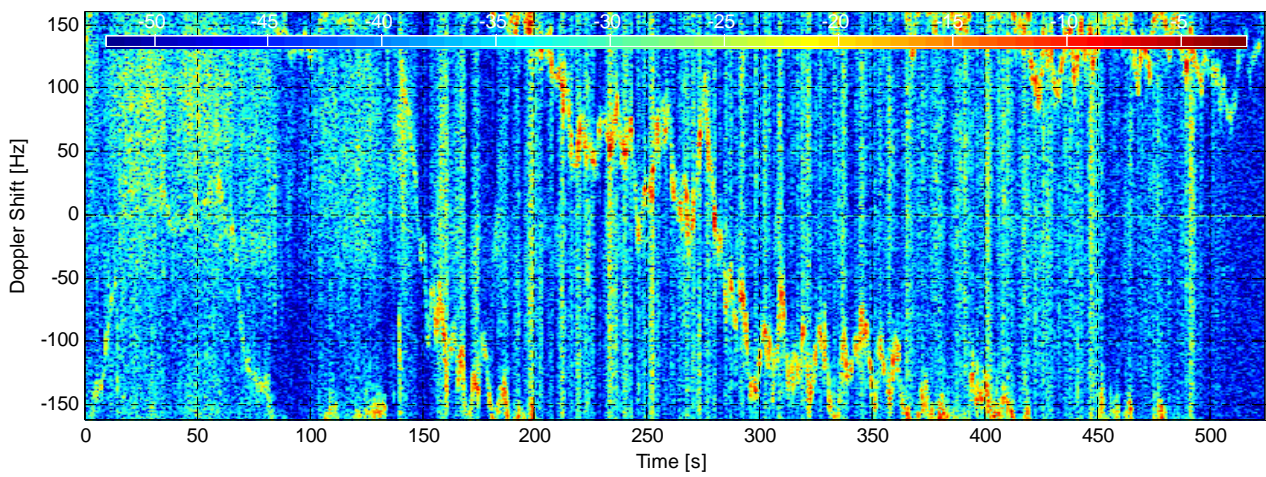
RCS [dBm².Hz⁻¹] at range -15 m (gate 3) for $f_1 = 8.930$ GHz - TSC08-004



RCS [dBm².Hz⁻¹] at range 0 m (gate 4) for $f_1 = 8.930$ GHz - TSC08-004

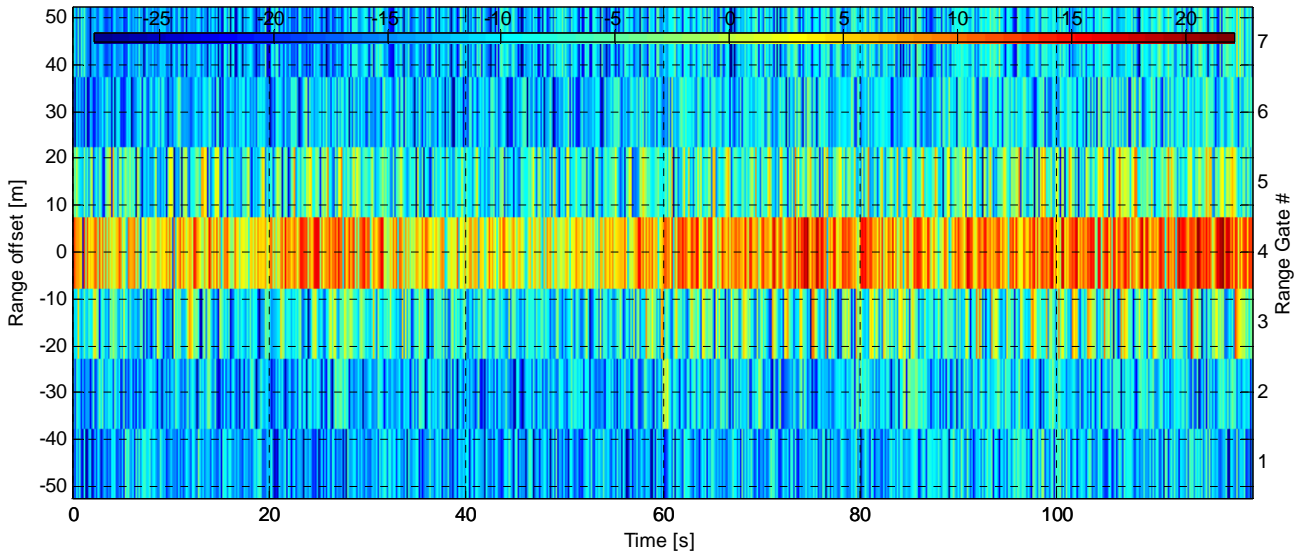


RCS [dBm².Hz⁻¹] at range 15 m (gate 5) for $f_1 = 8.930$ GHz - TSC08-004



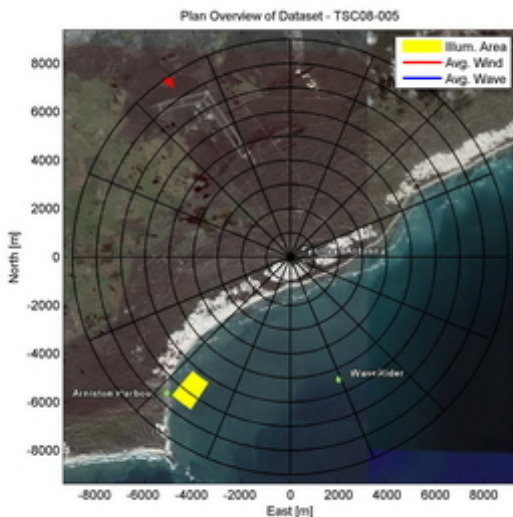
Dataset TSC08-005

RCS [dBm²] vs. time and range for $f_1 = 8.750$ GHz - TSC08-005

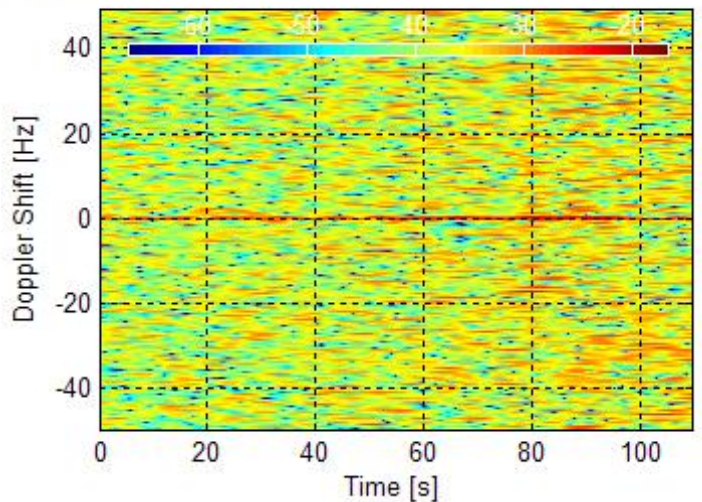


Experiment Summary	Value	Radar Setup	Value
Type	Target	Tx Frequency	9 GHz
Date	25-Jul-2006	PRF	10 kHz
Start Time	09:57:26.009	Tracking Range	6266 - 7465.36 m
Duration	1198264 PRI's (119.8263 s)	Range Extend	105 m (7 gates), 15 m res.
Original File	PF060725.008	Waveform Type	Stepped Frequency
Original Path	\20060725_ifs	Waveform Bandwidth	495 MHz
Processor Version	FMSCP Ver 01.21	Waveform File	CAL_SRP_500_5.txt

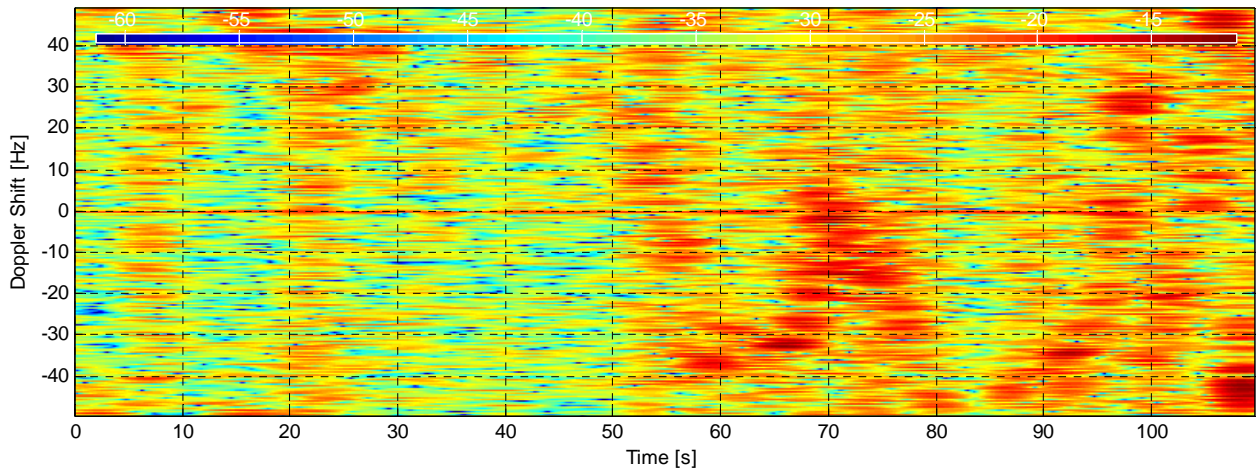
Environment	Value	Geometry	Value	Processing	Value
Inst. Wind	9.5 kts, 325.5 deg. N	Grazing Angle	0.486 - 0.524 deg.	Odd Gates Offset	Bypassed
Wind Gust	14.8 kts, 315 deg. N	Antenna Azm.	214.1 - 219.5 deg. N	Even Gates Offset	Bypassed
8hr Avg. Wind	4.76 kts, 333.9 deg. N	Antenna Elv.	-0.5081 deg.	I/Q Imbalance	Bypassed
Wave (SWH)	NaN m, NaN deg. N	Antenna BW.	1.8 deg. Az, 1.8 deg. El	Complex Conj.	Applied
		GPS Data	Not available	Calibr. Coeff.	188.6 - 193.6 dB



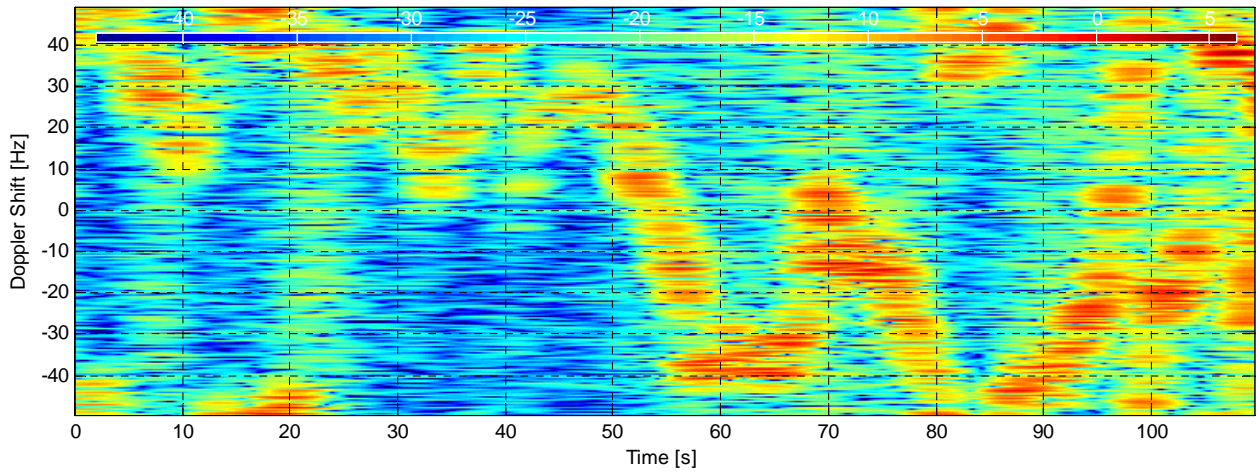
S [dBm².Hz⁻¹] at range -45 m (gate 1) for $f_1 = 8.750$ GHz - TSC08



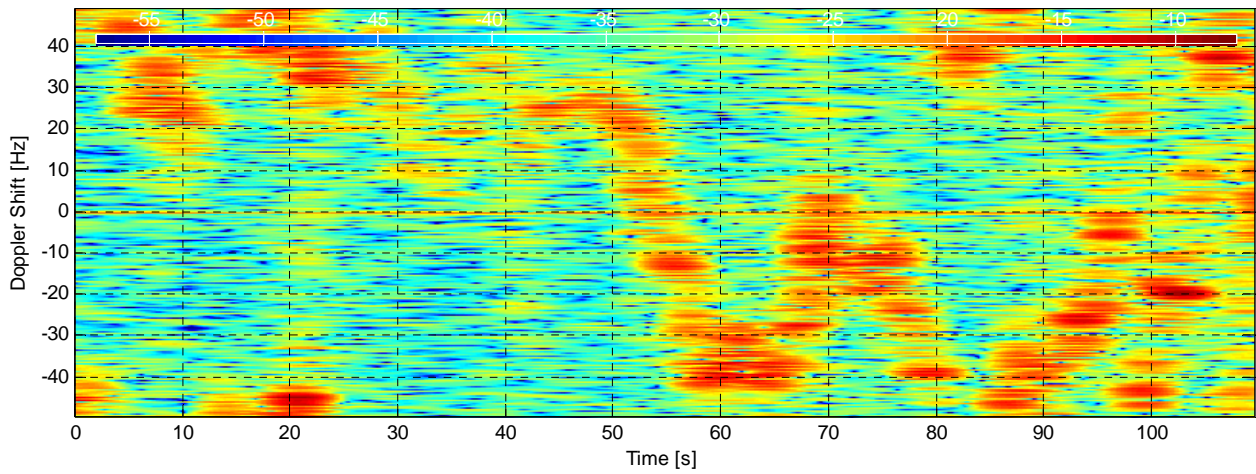
RCS [$\text{dBm}^2 \cdot \text{Hz}^{-1}$] at range -15 m (gate 3) for $f_1 = 8.750 \text{ GHz}$ - TSC08-005



RCS [$\text{dBm}^2 \cdot \text{Hz}^{-1}$] at range 0 m (gate 4) for $f_1 = 8.750 \text{ GHz}$ - TSC08-005

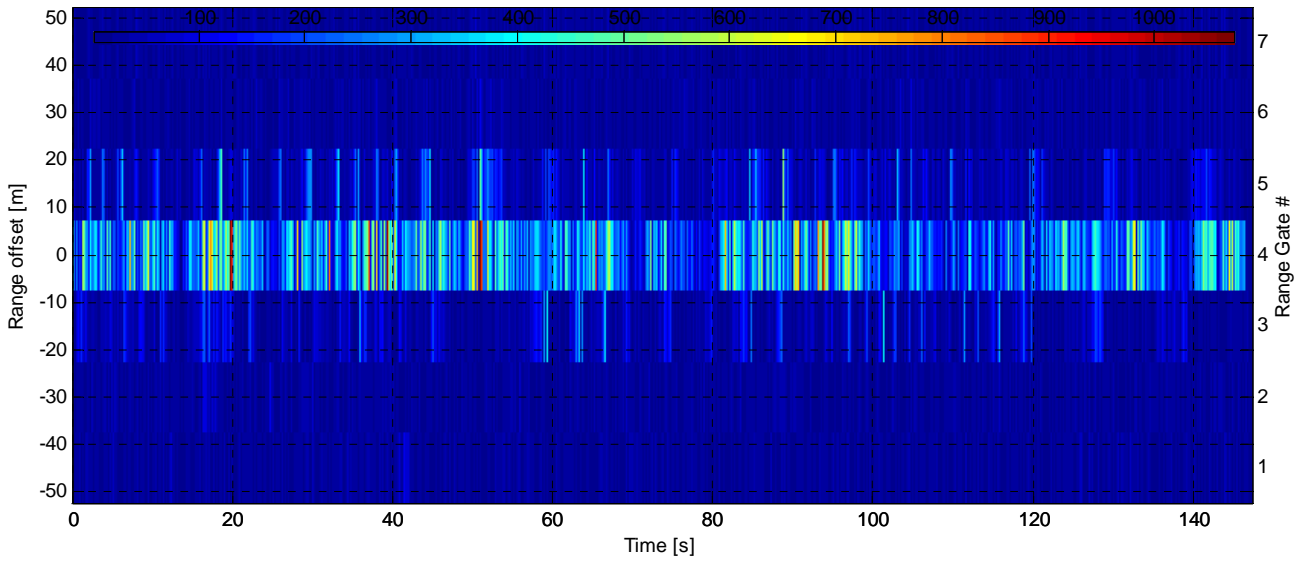


RCS [$\text{dBm}^2 \cdot \text{Hz}^{-1}$] at range 15 m (gate 5) for $f_1 = 8.750 \text{ GHz}$ - TSC08-005



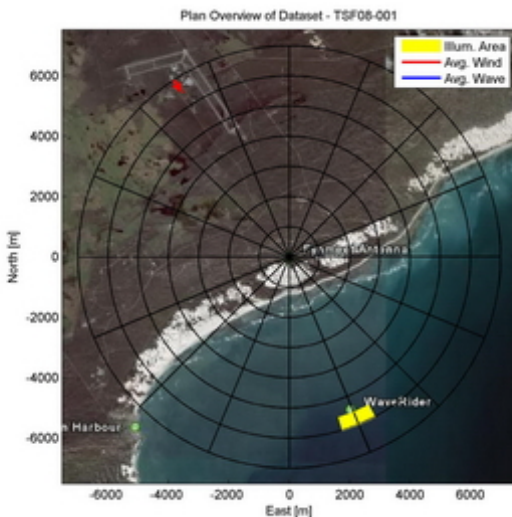
Dataset TSF08-001

Received signal amplitude [V] vs. time and range for $f_1 = 6.530$ GHz - TSF08-001

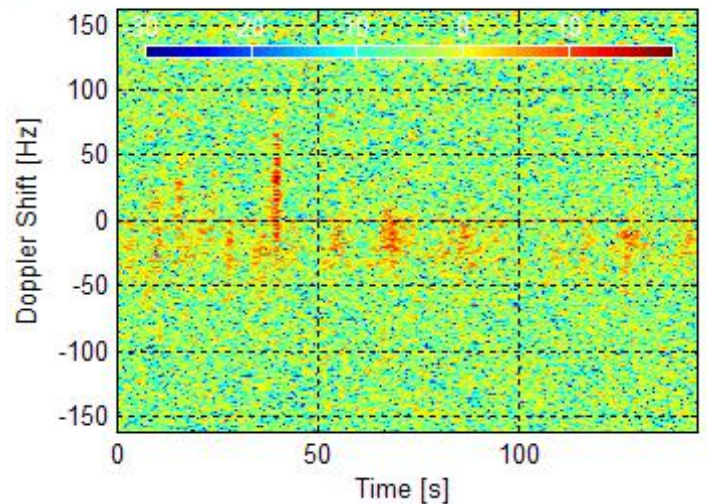


Experiment Summary	Value	Radar Setup	Value
Type	Target	Tx Frequency	6.6 GHz
Date	25-Jul-2006	PRF	10 kHz
Start Time	09:44:06.002	Tracking Range	5604.87 - 5974.82 m
Duration	1473182 PRI's (147.3181 s)	Range Extend	105 m (7 gates), 15 m res.
Original File	PF060725.006	Waveform Type	Stepped Frequency
Original Path	\\20060725_ifs	Waveform Bandwidth	145 MHz
Processor Version	FMSCP Ver 01.21	Waveform File	SC_SRP_5M30P.txt

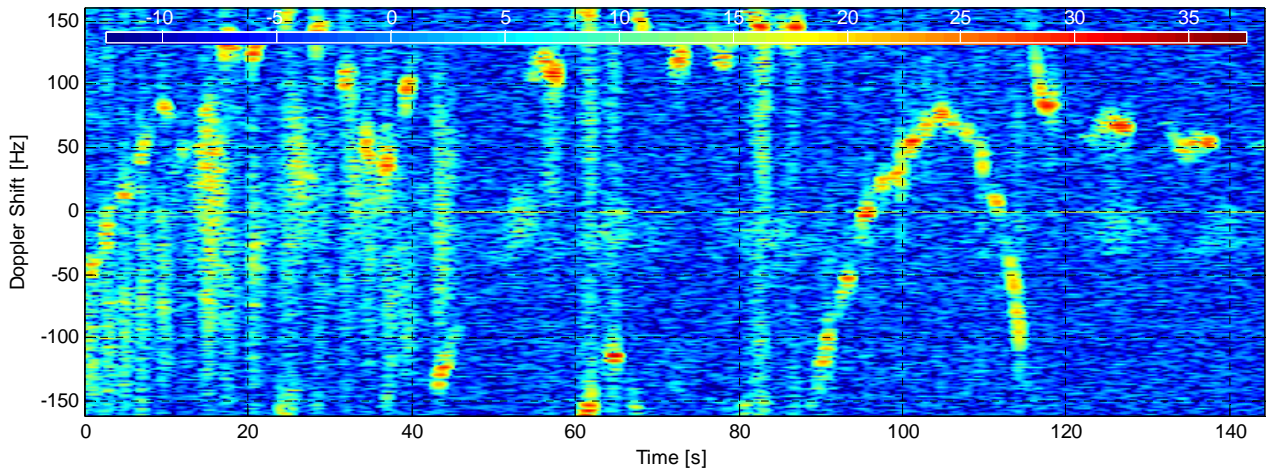
Environment	Value	Geometry	Value	Processing	Value
Inst. Wind	9.89 kts, 327 deg. N	Grazing Angle	N/A	Odd Gates Offset	Bypassed
Wind Gust	14.8 kts, 315 deg. N	Antenna Azm.	152.9 - 161.9 deg. N	Even Gates Offset	Bypassed
8hr Avg. Wind	4.59 kts, 334.4 deg. N	Antenna Elv.	-0.6839 deg.	I/Q Imbalance	Bypassed
Wave (SWH)	NaN m, NaN deg. N	Antenna BW.	Not available	Complex Conj.	Applied
		GPS Data	Not available	Calibr. Coeff.	Bypassed



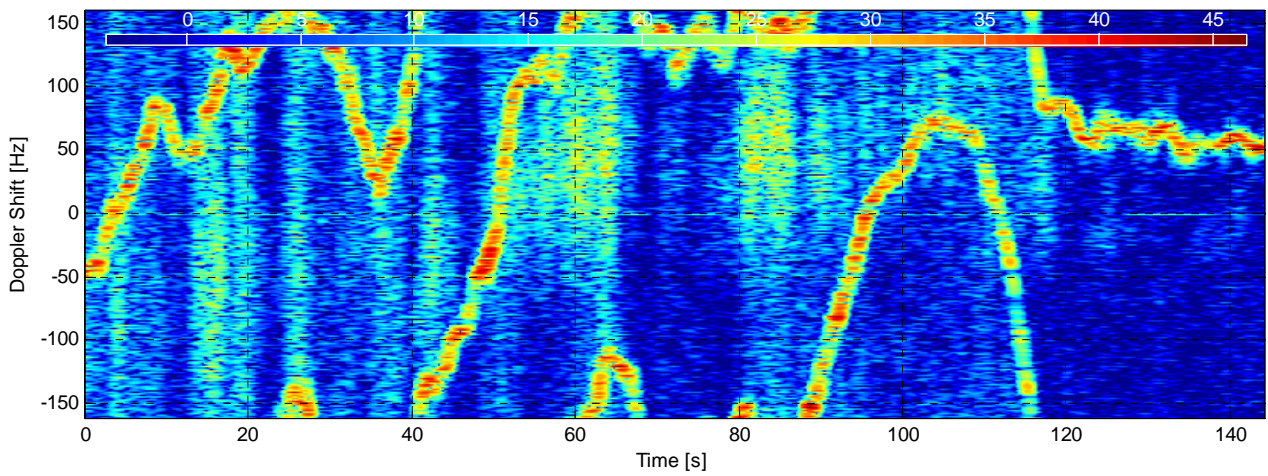
power [dBV.Hz⁻¹] at range -45 m (gate 1) for $f_1 = 6.530$ GHz - TSF



Rx power [dBV.Hz⁻¹] at range -15 m (gate 3) for $f_1 = 6.530$ GHz - TSF08-001



Rx power [dBV.Hz⁻¹] at range 0 m (gate 4) for $f_1 = 6.530$ GHz - TSF08-001



Rx power [dBV.Hz⁻¹] at range 15 m (gate 5) for $f_1 = 6.530$ GHz - TSF08-001

