

Presented by

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Cayenne 2015 – HWL RDR4000 Dataset

# High Altitude Ice Crystals Introduction

Boeing 757-225 registered N757HW	
Certificate of airworthiness "Experimental"	
Ceiling	FL 450
Cruise speed	360-500 kts (TAS) @ ~ FL350
Endurance	8.5 hours in flight
MTOW	115.7t
Payload	4500kg
Available electrical load	400Hz and 60Hz AC, 28v DC
Wingspan	38.05 m (124' 10")
Length	47.32 m (155' 3")
Height	13.56 m (44' 6")
Engines	Rolls-Royce RB211-535E4-37/10
Noise	Level 3
Other features	Engine testing pylon
	Honeywell IntuVue® RDR-4000 WXR
	RVSM
	ADS-B Out
	L Band SATCOM (Voice and Data)
	VHF, HF voice radio
	SmartLanding / SmartRunway
	Digital Data Recording
	16 seats (excluding pilots)



- RDR-4000 radar with Certified Port Recorder installed on Boeing 757
- Certified Port Recorder records raw – unprocessed data

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# High Altitude Ice Crystals

## Data availability

- Radar dataset
  - ▶ Radar reflectivity data are stored in binary format
  - ▶ The buffers, one every 30-40s, are extracted at user selected range and inter/extrapolated into a grid of 400×600×60 points
  - ▶ There are 60 layers, covering 60 000 feet of flight altitudes MSL. 400 samples correspond to user selected range (in our case always 160 nm)
- A/C dataset
  - ▶ Flight information from air data computers is provided in .csv
- Matlab routines included to ease retrieval of the data
- Documentation available
- Dataset, utilities and documentation to be uploaded on the CNRS/ LaMP database

High Altitude Ice Crystals (HAIC, 314314)

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