>> Cloud_radar_ZEN_LV1

Source:

D:\Data\Cloud radar\Delft\D11\210711_000000_P00_ZEN.LV1.NC

Format:

netcdf4

Global Attributes:

Program name = 'Doppler 3 sec'

Customer = 'DELFT2'

Dimensions:

TAlt = 94

HAlt = 94

Chirp = 3

C1Range = 37

C1Vel = 512

C2Range = 94

C2Vel = 256

C3Range = 185

C3Vel = 256

Time = 1245

Variables:

ProgNo

Size: 1x1

Dimensions:

Datatype: int32

Attributes:

Name = 'Chirp generator program number'

ModelNo

Size: 1x1

Dimensions:

Datatype: int32

Attributes:

Name = 'Radar configuration: 0 - 94 GHz single pol, 1 - 94 GHz STSR, 2 - 94 GHz LDR'

Freq

Size: 1x1

Dimensions:

Datatype: single

Attributes:

Name = 'Carrier frequency of the radar active channel'

Units = 'GHz'

AntSep

Size: 1x1

Dimensions:

Datatype: single

Attributes:

Name = 'Distance between antenna axes'

Units = 'm'

AntDia

Size: 1x1

Dimensions:

Datatype: single

Attributes:

Name = 'Antenna diameter'

Units = 'm'

AntG

Size: 1x1

Dimensions:

Datatype: single

Attributes:

Name = 'Antenna gain'

Units = 'linear'

HPBW

Size: 1x1

Dimensions:

Datatype: single

Attributes:

Name = 'Antenna one way half power beam width'

Units = 'deg'

DualPol

Size: 1x1

Dimensions:

Datatype: char

Attributes:

Name = 'Polarimetric configuration. 0: Single pol, 1: LDR mode, 2: STSR mode'

SampDur

Size: 1x1

Dimensions:

Datatype: single

Attributes:

Name = 'Sample duration'

Units = 's'

GPSLat

Size: 1x1

Dimensions:

Datatype: single

Attributes:

Name = 'GPS latitude'

Units = 'deg'

GPSLon

Size: 1x1

Dimensions:

Datatype: single

Attributes:

Name = 'GPS longitude'

Units = 'deg'

CallInt

Size: 1x1

Dimensions:

Datatype: int32

Attributes:

Name = 'Time period for automatic zero calibrations'

Units = 'Number of samples'

TAlts

Size: 94x1

Dimensions: TAlt

Datatype: single

Attributes:

Name = 'Temperature profile altitude layers'

Units = 'm'

HAlts

Size: 94x1

Dimensions: HAlt

Datatype: single

Attributes:

Name = 'Humidity profile altitude layers'

Units = 'm'

ChirpNum

Size: 1x1

Dimensions:

Datatype: int32

Attributes:

Name = 'Number of chirp sequences'

DoppLen

Size: 3x1

Dimensions: Chirp

Datatype: int32

Attributes:

Name = 'Number of spectral lines in Doppler spectra'

AvgNum

Size: 3x1

Dimensions: Chirp

Datatype: int32

Attributes:

Name = 'Number of chirps averaged (coherently and non-coherently) for a single time sample'

SeqIntTime

Size: 3x1

Dimensions: Chirp

Datatype: single

Attributes:

Name = 'Effective integration time'

Units = 's'

RangeRes

Size: 3x1

Dimensions: Chirp

Datatype: single

Attributes:

Name = 'Range resolution'

Units = 'm'

MaxVel

Size: 3x1

Dimensions: Chirp

Datatype: single

Attributes:

Name = 'Unambiguous Doppler velocity (+/-)'

Units = 'm/s'

SupPowLev

Size: 1x1

Dimensions:

Datatype: char

Attributes:

Name = 'Flag indicating, if power leveling has been suppressed. 1 - yes, 0 - no'

SpkFilEna

Size: 1x1

Dimensions:

Datatype: char

Attributes:

Name = 'Flag indicating, if spike/plankton filter has been used. 0 - no, 1 - yes'

PhaseCor

Size: 1x1

Dimensions:

Datatype: char

Attributes:

Name = 'Flag indicating, if differential phase correction has been used (only for dual pol radars). 0 - no, 1 - yes'

RelPowCor

Size: 1x1

Dimensions:

Datatype: char

Attributes:

Name = 'Flag indicating, if relative power correction has been used (only for dual pol radars). 0 - no, 1 - yes'

FFTWin

Size: 1x1

Dimensions:

Datatype: char

Attributes:

Name = 'FFT windows in use (for both ranging and Doppler FFT). 0 - Square, 1 - Parzen, 2 - Blackman, 3 - Welch, 4 - Slepian2, 5 - Slepian3'

FFTInRng

Size: 1x1

Dimensions:

Datatype: uint16

Attributes:

Name = 'ADC input voltage range (+/-)'

Units = 'mV'

SWVersion

Size: 1x1

Dimensions:

Datatype: uint16

Attributes:

Name = 'Software Version (* 100)'

NoiseFilt

Size: 1x1

Dimensions:

Datatype: single

Attributes:

Name = 'Noise filter threshold factor (multiple of power noise density STD)'

Time

Size: 1245x1

Dimensions: Time

Datatype: uint32

Attributes:

Name = 'Time'

Units = 'Number of seconds since 1/1/2001 00:00:00 [UTC]'

Timems

Size: 1245x1

Dimensions: Time

Datatype: int32

Attributes:

Name = 'Milliseconds'

Units = 'ms'

QualFlag

Size: 1245x1

Dimensions: Time

Datatype: char

Attributes:

Name = 'Quality flag. Bit 1: ADC saturation, Bit 2: spectral width too high, Bit 3: no transmitter power leveling'

Rain

Size: 1245x1

Dimensions: Time

Datatype: single

Attributes:

Name = 'Rain rate from weather station'

Units = 'mm/h'

SurfRelHum

Size: 1245x1

Dimensions: Time

Datatype: single

Attributes:

Name = 'Relative humidity from weather station'

Units = '%'

SurfTemp

Size: 1245x1

Dimensions: Time

Datatype: single

Attributes:

Name = 'Surface temperature from weather station'

Units = 'K'

SurfPres

Size: 1245x1

Dimensions: Time

Datatype: single

Attributes:

Name = 'Surface atmospheric pressure from weather station'

Units = 'hPa'

SurfWS

Size: 1245x1

Dimensions: Time

Datatype: single

Attributes:

Name = 'Surface wind speed from weather station'

Units = 'm/s'

SurfWD

Size: 1245x1

Dimensions: Time

Datatype: single

Attributes:

Name = 'Surface wind direction from weather station'

Units = 'deg'

DDVolt

Size: 1245x1

Dimensions: Time

Datatype: single

Attributes:

Name = 'Direct detection channel voltage'

Units = 'V'

DDTb

Size: 1245x1

Dimensions: Time

Datatype: single

Attributes:

Name = 'Direct detection brightness temperature'

Units = 'K'

LWP

Size: 1245x1

Dimensions: Time

Datatype: single

Attributes:

Name = 'Liquid water path'

Units = 'g/m^2'

PowIF

Size: 1245x1

Dimensions: Time

Datatype: single

Attributes:

Name = 'IF power at ADC'

Units = 'uW'

Elv

Size: 1245x1

Dimensions: Time

Datatype: single

Attributes:

Name = 'Elevation'

Units = 'deg'

Azm

Size: 1245x1

Dimensions: Time

Datatype: single

Attributes:

Name = 'Azimuth'

Units = 'deg'

Status

Size: 1245x1

Dimensions: Time

Datatype: single

Attributes:

Name = 'Mitigation status flags. 0/1: heater switch (ON/OFF), 0/10: blower switch (ON/OFF), 0/100: temp. profile (ON/OFF), 0/1000: hum. profile (ON/OFF)'

TPow

Size: 1245x1

Dimensions: Time

Datatype: single

Attributes:

Name = 'Transmitted power'

Units = 'W'

TTemp

Size: 1245x1

Dimensions: Time

Datatype: single

Attributes:

Name = 'Transmitter temperature'

Units = 'K'

RTemp

Size: 1245x1

Dimensions: Time

Datatype: single

Attributes:

Name = 'Receiver temperature'

Units = 'K'

PCTemp

Size: 1245x1

Dimensions: Time

Datatype: single

Attributes:

Name = 'PC temperature'

Units = 'K'

CBH

Size: 1245x1

Dimensions: Time

Datatype: single

Attributes:

Name = 'Cloud Bottom Height'

Units = 'm'

Inc_El

Size: 1245x1

Dimensions: Time

Datatype: single

Attributes:

Name = 'Elevation Inclination'

Units = 'deg'

Inc_ElA

Size: 1245x1

Dimensions: Time

Datatype: single

Attributes:

Name = 'Elevation Axis Inclination'

Units = 'deg'

TProf

Size: 94x1245

Dimensions: TAlt,Time

Datatype: single

Attributes:

Name = 'Temperature profiles from RPG radiometer'

Units = 'K'

AHProf

Size: 94x1245

Dimensions: HAlt,Time

Datatype: single

Attributes:

Name = 'Absolute humidity profiles from RPG radiometer'

Units = 'g/m^3'

RHProf

Size: 94x1245

Dimensions: HAlt,Time

Datatype: single

Attributes:

Name = 'Relative humidity profiles from RPG radiometer'

Units = '%'

C1SLv

Size: 37x1245

Dimensions: C1Range,Time

Datatype: single

Attributes:

Name = 'Sensitivity limit for vertical polarization: Chirp 1'

Units = 'mm^6/m^3'

C1SLh

Size: 37x1245

Dimensions: C1Range,Time

Datatype: single

Attributes:

Name = 'Sensitivity limit for horizontal polarization: Chirp 1'

Units = 'mm^6/m^3'

C2SLv

Size: 94x1245

Dimensions: C2Range,Time

Datatype: single

Attributes:

Name = 'Sensitivity limit for vertical polarization: Chirp 2'

Units = 'mm^6/m^3'

C2SLh

Size: 94x1245

Dimensions: C2Range,Time

Datatype: single

Attributes:

Name = 'Sensitivity limit for horizontal polarization: Chirp 2'

Units = 'mm^6/m^3'

C3SLv

Size: 185x1245

Dimensions: C3Range,Time

Datatype: single

Attributes:

Name = 'Sensitivity limit for vertical polarization: Chirp 3'

Units = 'mm^6/m^3'

C3SLh

Size: 185x1245

Dimensions: C3Range,Time

Datatype: single

Attributes:

Name = 'Sensitivity limit for horizontal polarization: Chirp 3'

Units = 'mm^6/m^3'

C1Range

Size: 37x1

Dimensions: C1Range

Datatype: single

Attributes:

Name = 'Range'

C2Range

Size: 94x1

Dimensions: C2Range

Datatype: single

Attributes:

Name = 'Range'

C3Range

Size: 185x1

Dimensions: C3Range

Datatype: single

Attributes:

Name = 'Range'

C1ZE

Size: 37x1245

Dimensions: C1Range,Time

Datatype: single

Attributes:

Name = 'Equivalent radar reflectivity factor: Chirp 1'

Units = 'mm^6/m^3'

C1MeanVel

Size: 37x1245

Dimensions: C1Range,Time

Datatype: single

Attributes:

Name = 'Mean Doppler velocity: Chirp 1'

Units = 'm/s'

C1SpecWidth

Size: 37x1245

Dimensions: C1Range,Time

Datatype: single

Attributes:

Name = 'Spectrum width: Chirp 1'

Units = 'm/s'

C1Skew

Size: 37x1245

Dimensions: C1Range,Time

Datatype: single

Attributes:

Name = 'Skewness: Chirp 1'

Units = 'linear'

C1Kurt

Size: 37x1245

Dimensions: C1Range,Time

Datatype: single

Attributes:

Name = 'Kurtosis: Chirp 1'

Units = 'linear'

C1ZDR

Size: 37x1245

Dimensions: C1Range,Time

Datatype: single

Attributes:

Name = 'Differential reflectivity: Chirp 1'

Units = 'dB'

C1RHV

Size: 37x1245

Dimensions: C1Range,Time

Datatype: single

Attributes:

Name = 'Correlation coefficient: Chirp 1'

Units = 'linear [0...1]'

C1PhiDP

Size: 37x1245

Dimensions: C1Range,Time

Datatype: single

Attributes:

Name = 'Differential phase shift: Chirp 1'

Units = 'rad'

C1ZE45

Size: 37x1245

Dimensions: C1Range,Time

Datatype: single

Attributes:

Name = 'Slanted equivalent radar reflectivity factor: Chirp 1'

Units = 'mm^6/m^3'

C1SLDR

Size: 37x1245

Dimensions: C1Range,Time

Datatype: single

Attributes:

Name = 'Slanted linear depolarization ratio: Chirp 1'

Units = 'dB'

C1SRCX

Size: 37x1245

Dimensions: C1Range,Time

Datatype: single

Attributes:

Name = 'Co-cross-channel correlation coefficient in slanted basis: Chirp 1'

Units = 'linear [0...1]'

C1KDP

Size: 37x1245

Dimensions: C1Range,Time

Datatype: single

Attributes:

Name = 'Specific differential phase shift: Chirp 1'

Units = 'rad/km'

C1DiffAtt

Size: 37x1245

Dimensions: C1Range,Time

Datatype: single

Attributes:

Name = 'Differential attenuation: Chirp 1'

Units = 'dB/km'

C2ZE

Size: 94x1245

Dimensions: C2Range,Time

Datatype: single

Attributes:

Name = 'Equivalent radar reflectivity factor: Chirp 2'

Units = 'mm^6/m^3'

C2MeanVel

Size: 94x1245

Dimensions: C2Range,Time

Datatype: single

Attributes:

Name = 'Mean Doppler velocity: Chirp 2'

Units = 'm/s'

C2SpecWidth

Size: 94x1245

Dimensions: C2Range,Time

Datatype: single

Attributes:

Name = 'Spectrum width: Chirp 2'

Units = 'm/s'

C2Skew

Size: 94x1245

Dimensions: C2Range,Time

Datatype: single

Attributes:

Name = 'Skewness: Chirp 2'

Units = 'linear'

C2Kurt

Size: 94x1245

Dimensions: C2Range,Time

Datatype: single

Attributes:

Name = 'Kurtosis: Chirp 2'

Units = 'linear'

C2ZDR

Size: 94x1245

Dimensions: C2Range,Time

Datatype: single

Attributes:

Name = 'Differential reflectivity: Chirp 2'

Units = 'dB'

C2RHV

Size: 94x1245

Dimensions: C2Range,Time

Datatype: single

Attributes:

Name = 'Correlation coefficient: Chirp 2'

Units = 'linear [0...1]'

C2PhiDP

Size: 94x1245

Dimensions: C2Range,Time

Datatype: single

Attributes:

Name = 'Differential phase shift: Chirp 2'

Units = 'rad'

C2ZE45

Size: 94x1245

Dimensions: C2Range,Time

Datatype: single

Attributes:

Name = 'Slanted equivalent radar reflectivity factor: Chirp 2'

Units = 'mm^6/m^3'

C2SLDR

Size: 94x1245

Dimensions: C2Range,Time

Datatype: single

Attributes:

Name = 'Slanted linear depolarization ratio: Chirp 2'

Units = 'dB'

C2SRCX

Size: 94x1245

Dimensions: C2Range,Time

Datatype: single

Attributes:

Name = 'Co-cross-channel correlation coefficient in slanted basis: Chirp 2'

Units = 'linear [0...1]'

C2KDP

Size: 94x1245

Dimensions: C2Range,Time

Datatype: single

Attributes:

Name = 'Specific differential phase shift: Chirp 2'

Units = 'rad/km'

C2DiffAtt

Size: 94x1245

Dimensions: C2Range,Time

Datatype: single

Attributes:

Name = 'Differential attenuation: Chirp 2'

Units = 'dB/km'

C3ZE

Size: 185x1245

Dimensions: C3Range,Time

Datatype: single

Attributes:

Name = 'Equivalent radar reflectivity factor: Chirp 3'

Units = 'mm^6/m^3'

C3MeanVel

Size: 185x1245

Dimensions: C3Range,Time

Datatype: single

Attributes:

Name = 'Mean Doppler velocity: Chirp 3'

Units = 'm/s'

C3SpecWidth

Size: 185x1245

Dimensions: C3Range,Time

Datatype: single

Attributes:

Name = 'Spectrum width: Chirp 3'

Units = 'm/s'

C3Skew

Size: 185x1245

Dimensions: C3Range,Time

Datatype: single

Attributes:

Name = 'Skewness: Chirp 3'

Units = 'linear'

C3Kurt

Size: 185x1245

Dimensions: C3Range,Time

Datatype: single

Attributes:

Name = 'Kurtosis: Chirp 3'

Units = 'linear'

C3ZDR

Size: 185x1245

Dimensions: C3Range,Time

Datatype: single

Attributes:

Name = 'Differential reflectivity: Chirp 3'

Units = 'dB'

C3RHV

Size: 185x1245

Dimensions: C3Range,Time

Datatype: single

Attributes:

Name = 'Correlation coefficient: Chirp 3'

Units = 'linear [0...1]'

C3PhiDP

Size: 185x1245

Dimensions: C3Range,Time

Datatype: single

Attributes:

Name = 'Differential phase shift: Chirp 3'

Units = 'rad'

C3ZE45

Size: 185x1245

Dimensions: C3Range,Time

Datatype: single

Attributes:

Name = 'Slanted equivalent radar reflectivity factor: Chirp 3'

Units = 'mm^6/m^3'

C3SLDR

Size: 185x1245

Dimensions: C3Range,Time

Datatype: single

Attributes:

Name = 'Slanted linear depolarization ratio: Chirp 3'

Units = 'dB'

C3SRCX

Size: 185x1245

Dimensions: C3Range,Time

Datatype: single

Attributes:

Name = 'Co-cross-channel correlation coefficient in slanted basis: Chirp 3'

Units = 'linear [0...1]'

C3KDP

Size: 185x1245

Dimensions: C3Range,Time

Datatype: single

Attributes:

Name = 'Specific differential phase shift: Chirp 3'

Units = 'rad/km'

C3DiffAtt

Size: 185x1245

Dimensions: C3Range,Time

Datatype: single

Attributes:

Name = 'Differential attenuation: Chirp 3'

Units = 'dB/km'

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