

File: 240503_000002_P00_ZEN.LV0.nc

Variables and Attributes:

Variable Name: ProgNo Dimensions: () Shape: () Data Type: int32 Name: Chirp generator program number

Variable Name: ModelNo Dimensions: () Shape: () Data Type: int32 Name: Radar configuration: 0 - 94 GHz single pol, 1 - 94 GHz STSR, 2 - 94 GHz LDR

Variable Name: Freq Dimensions: () Shape: () Data Type: float32 Name: Carrier frequency of the radar active channel Units: GHz

Variable Name: AntSep Dimensions: () Shape: () Data Type: float32 Name: Distance between antenna axes Units: m

Variable Name: AntDia Dimensions: () Shape: () Data Type: float32 Name: Antenna diameter Units: m

Variable Name: AntG Dimensions: () Shape: () Data Type: float32 Name: Antenna gain Units: linear

Variable Name: HPBW Dimensions: () Shape: () Data Type: float32 Name: Antenna one way half power beam width Units: deg

Variable Name: RadarConst Dimensions: () Shape: () Data Type: float32 Name: Radar constant. For details see eq. 2.1.5 of the radar manual Units: linear

Variable Name: DualPol Dimensions: () Shape: () Data Type: |S1 Name: Polarimetric configuration. 0: Single pol, 1: LDR mode, 2: STSR mode

Variable Name: CompEna Dimensions: () Shape: () Data Type: |S1 Name: Spectral compression flag. 0: not compressed, 1: spectra compressed, 2: spectra compressed and spectral polarimetric variables are stored in the file

Variable Name: AntiAlias Dimensions: () Shape: () Data Type: |S1 Name: Antialiasing status. 0 - Spectra are not antialiased, 1 - Spectra have been antialiased.

Variable Name: SampDur Dimensions: () Shape: () Data Type: float32 Name: Sample duration Units: s

Variable Name: GPSLat Dimensions: () Shape: () Data Type: float32 Name: GPS latitude Units: deg

Variable Name: GPSLon Dimensions: () Shape: () Data Type: float32 Name: GPS longitude Units: deg

Variable Name: CallInt Dimensions: () Shape: () Data Type: int32 Name: Time period for automatic zero calibrations Units: Number of samples

Variable Name: TAlt Dimensions: ('TAlt',) Shape: (93,) Data Type: float32 Name: Temperature profile altitude layers Units: m

Variable Name: HAlt Dimensions: ('HAlt',) Shape: (93,) Data Type: float32 Name: Humidity profile altitude layers Units: m

Variable Name: ChirpNum Dimensions: () Shape: () Data Type: int32 Name: Number of chirp sequences

Variable Name: DoppLen Dimensions: ('Chirp',) Shape: (3,) Data Type: int32 Name: Number of spectral lines in Doppler spectra

Variable Name: AvgNum Dimensions: ('Chirp',) Shape: (3,) Data Type: int32 Name: Number of chirps averaged (coherently and non-coherently) for a single time sample

Variable Name: SeqIntTime Dimensions: ('Chirp',) Shape: (3,) Data Type: float32 Name: Effective integration time Units: s

Variable Name: RangeRes Dimensions: ('Chirp',) Shape: (3,) Data Type: float32 Name: Range resolution Units: m

Variable Name: MaxVel Dimensions: ('Chirp',) Shape: (3,) Data Type: float32 Name: Unambiguous Doppler velocity (+/-) Units: m/s

Variable Name: ChanBW Dimensions: ('Chirp',) Shape: (3,) Data Type: float32 Name: Bandwidth of individual radar channel (range gate) Units: Hz

Variable Name: ChirpLowIF Dimensions: ('Chirp',) Shape: (3,) Data Type: int32 Name: Lowest IF frequency Units: Hz

Variable Name: ChirpHighIF Dimensions: ('Chirp',) Shape: (3,) Data Type: int32 Name: Highest IF frequency Units: Hz

Variable Name: ChirpFFTSize Dimensions: ('Chirp',) Shape: (3,) Data Type: int32 Name: Ranging FFT size

Variable Name: ChirpInvSamp Dimensions: ('Chirp',) Shape: (3,) Data Type: int32 Name: Number of invalid samples at the beginning of chirps

Variable Name: ChirpCenterFreq Dimensions: ('Chirp',) Shape: (3,) Data Type: float32 Name: Chirp centre frequency at radar transmitter output Units: MHz

Variable Name: ChirpBW Dimensions: ('Chirp',) Shape: (3,) Data Type: float32

Variable Name: FFTStartInd Dimensions: ('Chirp',) Shape: (3,) Data Type: int32 Name: Start index in ranging FFT

Variable Name: FFTStopInd Dimensions: ('Chirp',) Shape: (3,) Data Type: int32 Name: Last index in ranging FFT

Variable Name: ChirpFFTNo Dimensions: ('Chirp',) Shape: (3,) Data Type: int32

Variable Name: SampRate Dimensions: () Shape: () Data Type: int32 Name: ADC sampling rate Units: Hz

Variable Name: MaxRange Dimensions: () Shape: () Data Type: int32 Name: Maximum unambiguous range Units: m

Variable Name: SupPowLev Dimensions: () Shape: () Data Type: |S1 Name: Flag indicating, if power leveling has been used. 0 - yes, 1 - no

Variable Name: SpkFilEna Dimensions: () Shape: () Data Type: |S1 Name: Flag indicating, if spike/plankton filter has been used. 0 - yes, 1 - no

Variable Name: PhaseCor Dimensions: () Shape: () Data Type: |S1 Name: Flag indicating, if differential phase correction has been used (only for dual pol radars). 0 - yes, 1 - no

Variable Name: RelPowCor Dimensions: () Shape: () Data Type: |S1 Name: Flag indicating, if relative power correction has been used (only for dual pol radars). 0 - yes, 1 - no

Variable Name: FFTWin Dimensions: () Shape: () Data Type: |S1 Name: FFT windows in use (for both ranging and Doppler FFT). 0 - Square, 1 - Parzen, 2 - Blackman, 3 - Welch, 4 - Slepian2, 5 - Slepian3

Variable Name: FFTInRng Dimensions: () Shape: () Data Type: uint16 Name: ADC input voltage range (+/-) Units: mV

Variable Name: SWVersion Dimensions: () Shape: () Data Type: uint16 Name: Software version * 100. For old software versions the value is 0.

Variable Name: NoiseFilt Dimensions: () Shape: () Data Type: float32 Name: Noise filter threshold factor (multiple of power noise density STD)

Variable Name: CalibrOffset Dimensions: () Shape: () Data Type: float32 Name: Calibration offset applied to the data Units: dB

Variable Name: Time Dimensions: ('Time',) Shape: (1220,) Data Type: uint32 Name: Time Units: Number of seconds since 1/1/2001 00:00:00 [UTC]

Variable Name: Timems Dimensions: ('Time',) Shape: (1220,) Data Type: int32 Name: Milliseconds Units: ms

Variable Name: QualFlag Dimensions: ('Time',) Shape: (1220,) Data Type: |S1 Name: Quality flag. Bit 1: ADC saturation, Bit 2: spectral width too high, Bit 3: no transmitter power leveling

Variable Name: Rain Dimensions: ('Time',) Shape: (1220,) Data Type: float32 Name: Rain rate from weather station Units: mm/h

Variable Name: SurfRelHum Dimensions: ('Time',) Shape: (1220,) Data Type: float32 Name: Relative humidity from weather station Units: %

Variable Name: SurfTemp Dimensions: ('Time',) Shape: (1220,) Data Type: float32 Name: Surface temperature from weather station Units: K

Variable Name: SurfPres Dimensions: ('Time',) Shape: (1220,) Data Type: float32 Name: Surface atmospheric pressure from weather station Units: hPa

Variable Name: SurfWS Dimensions: ('Time',) Shape: (1220,) Data Type: float32 Name: Surface wind speed from weather station Units: m/s

Variable Name: SurfWD Dimensions: ('Time',) Shape: (1220,) Data Type: float32 Name: Surface wind direction from weather station Units: deg

Variable Name: DDVlt Dimensions: ('Time',) Shape: (1220,) Data Type: float32 Name: Direct detection channel voltage Units: V

Variable Name: DDTb Dimensions: ('Time',) Shape: (1220,) Data Type: float32 Name: Direct detection brightness temperature Units: K

Variable Name: LWP Dimensions: ('Time',) Shape: (1220,) Data Type: float32 Name: Liquid water path Units: g/m²

Variable Name: PowIF Dimensions: ('Time',) Shape: (1220,) Data Type: float32 Name: IF power at ADC Units: uW

Variable Name: Elv Dimensions: ('Time',) Shape: (1220,) Data Type: float32 Name: Elevation Units: deg

Variable Name: Azm Dimensions: ('Time',) Shape: (1220,) Data Type: float32 Name: Azimuth Units: deg

Variable Name: Status Dimensions: ('Time',) Shape: (1220,) Data Type: float32 Name: Mitigation status flags. 0/1: heater switch (ON/OFF), 0/10: blower switch (ON/OFF)

Variable Name: TPow Dimensions: ('Time',) Shape: (1220,) Data Type: float32 Name: Transmitted power Units: W

Variable Name: TTemp Dimensions: ('Time',) Shape: (1220,) Data Type: float32 Name: Transmitter temperature Units: K

Variable Name: RTemp Dimensions: ('Time',) Shape: (1220,) Data Type: float32 Name: Receiver temperature Units: K

Variable Name: PCTemp Dimensions: ('Time',) Shape: (1220,) Data Type: float32 Name: PC temperature Units: K

Variable Name: Res_1 Dimensions: ('Time',) Shape: (1220,) Data Type: float32 Name: Active and passive channel noise power ratio

Variable Name: Res_2 Dimensions: ('Time',) Shape: (1220,) Data Type: float32 Name: Reserved float

Variable Name: Res_3 Dimensions: ('Time',) Shape: (1220,) Data Type: float32 Name: Reserved float

Variable Name: TProf Dimensions: ('Time', 'TAlt') Shape: (1220, 93) Data Type: float32 Name: Temperature profiles from RPG radiometer Units: K

Variable Name: AHProf Dimensions: ('Time', 'HAlt') Shape: (1220, 93) Data Type: float32 Name: Absolute humidity profiles from RPG radiometer Units: g/m³

Variable Name: RHProf Dimensions: ('Time', 'HAlt') Shape: (1220, 93) Data Type: float32 Name: Relative humidity profiles from RPG radiometer Units: %

Variable Name: C1PNv Dimensions: ('Time', 'C1Range') Shape: (1220, 20) Data Type: float32 Name: Total IF power at vertical polarization measured at ADC input: Chirp 1 Units: ???

Variable Name: C1SLv Dimensions: ('Time', 'C1Range') Shape: (1220, 20) Data Type: float32 Name: Sensitivity limit for vertical polarization: Chirp 1 Units: mm⁶/m³

Variable Name: C1PNh Dimensions: ('Time', 'C1Range') Shape: (1220, 20) Data Type: float32 Name: Total IF power at horizontal polarization measured at ADC input: Chirp 1 Units: ???

Variable Name: C1SLh Dimensions: ('Time', 'C1Range') Shape: (1220, 20) Data Type: float32 Name: Sensitivity limit for horizontal polarization: Chirp 1 Units: mm⁶/m³

Variable Name: C2PNv Dimensions: ('Time', 'C2Range') Shape: (1220, 53) Data Type: float32 Name: Total IF power at vertical polarization measured at ADC input: Chirp 2 Units: ???

Variable Name: C2SLv Dimensions: ('Time', 'C2Range') Shape: (1220, 53) Data Type: float32 Name: Sensitivity limit for vertical polarization: Chirp 2 Units: mm⁶/m³

Variable Name: C2PNh Dimensions: ('Time', 'C2Range') Shape: (1220, 53) Data Type: float32 Name: Total IF power at horizontal polarization measured at ADC input: Chirp 2 Units: ???

Variable Name: C2SLh Dimensions: ('Time', 'C2Range') Shape: (1220, 53) Data Type: float32 Name: Sensitivity limit for horizontal polarization: Chirp 2 Units: mm⁶/m³

Variable Name: C3PNv Dimensions: ('Time', 'C3Range') Shape: (1220, 265) Data Type: float32 Name: Total IF power at vertical polarization measured at ADC input: Chirp 3 Units: ???

Variable Name: C3SLv Dimensions: ('Time', 'C3Range') Shape: (1220, 265) Data Type: float32 Name: Sensitivity limit for vertical polarization: Chirp 3 Units: mm⁶/m³

Variable Name: C3PNh Dimensions: ('Time', 'C3Range') Shape: (1220, 265) Data Type: float32 Name: Total IF power at horizontal polarization measured at ADC input: Chirp 3 Units: ???

Variable Name: C3SLh Dimensions: ('Time', 'C3Range') Shape: (1220, 265) Data Type: float32 Name: Sensitivity limit for horizontal polarization: Chirp 3 Units: mm⁶/m³

Variable Name: C1Fr Dimensions: ('C1Range',) Shape: (20,) Data Type: int32 Name: Range factor

Variable Name: C1Range Dimensions: ('C1Range',) Shape: (20,) Data Type: float32 Name: Range

Variable Name: C2Fr Dimensions: ('C2Range',) Shape: (53,) Data Type: int32 Name: Range factor

Variable Name: C2Range Dimensions: ('C2Range',) Shape: (53,) Data Type: float32 Name: Range

Variable Name: C3Fr Dimensions: ('C3Range',) Shape: (265,) Data Type: int32 Name: Range factor

Variable Name: C3Range Dimensions: ('C3Range',) Shape: (265,) Data Type: float32 Name: Range

Variable Name: C1VNoisePow Dimensions: ('Time', 'C1Range') Shape: (1220, 20) Data Type: float32 Name: Integrated Doppler spectrum noise power in vertical channel: Chirp 1 Units: mm⁶/m³

Variable Name: C1HNoisePow Dimensions: ('Time', 'C1Range') Shape: (1220, 20) Data Type: float32 Name: Integrated Doppler spectrum noise power in horizontal channel: Chirp 1 Units: mm⁶/m³

Variable Name: C2VNoisePow Dimensions: ('Time', 'C2Range') Shape: (1220, 53) Data Type: float32 Name: Integrated Doppler spectrum noise power in vertical channel: Chirp 2 Units: mm⁶/m³

Variable Name: C2HNoisePow Dimensions: ('Time', 'C2Range') Shape: (1220, 53) Data Type: float32 Name: Integrated Doppler spectrum noise power in horizontal channel: Chirp 2 Units: mm⁶/m³

Variable Name: C3VNoisePow Dimensions: ('Time', 'C3Range') Shape: (1220, 265) Data Type: float32 Name: Integrated Doppler spectrum noise power in vertical channel: Chirp 3 Units: mm⁶/m³

Variable Name: C3HNoisePow Dimensions: ('Time', 'C3Range') Shape: (1220, 265) Data Type: float32 Name: Integrated Doppler spectrum noise power in horizontal channel: Chirp 3 Units: mm⁶/m³

Variable Name: C1VSpec Dimensions: ('Time', 'C1Range', 'C1Vel') Shape: (1220, 20, 512) Data Type: float32 Name: Doppler spectrum at vertical polarization: Chirp 1 Units: mm⁶/m³ _FillValue: -999.0

Variable Name: C1HSpec Dimensions: ('Time', 'C1Range', 'C1Vel') Shape: (1220, 20, 512) Data Type: float32 Name: Doppler spectrum at horizontal polarization: Chirp 1 Units: mm⁶/m³ _FillValue: -999.0

Variable Name: C1ReVHSpec Dimensions: ('Time', 'C1Range', 'C1Vel') Shape: (1220, 20, 512) Data Type: float32 Name: Real part of covariance spectrum: Chirp 1 Units: mm⁶/m³ _FillValue: -999.0

Variable Name: C1ImVHSpec Dimensions: ('Time', 'C1Range', 'C1Vel') Shape: (1220, 20, 512) Data Type: float32 Name: Imaginary part of covariance spectrum: Chirp 1 Units: mm⁶/m³ _FillValue: -999.0

Variable Name: C2VSpec Dimensions: ('Time', 'C2Range', 'C2Vel') Shape: (1220, 53, 512) Data Type: float32 Name: Doppler spectrum at vertical polarization: Chirp 2 Units: mm⁶/m³ _FillValue: -999.0

Variable Name: C2HSpec Dimensions: ('Time', 'C2Range', 'C2Vel') Shape: (1220, 53, 512) Data Type: float32 Name: Doppler spectrum at horizontal polarization: Chirp 2 Units: mm⁶/m³ _FillValue: -999.0

Variable Name: C2ReVHSpec Dimensions: ('Time', 'C2Range', 'C2Vel') Shape: (1220, 53, 512) Data Type: float32 Name: Real part of covariance spectrum: Chirp 2 Units: mm⁶/m³ _FillValue: -999.0

Variable Name: C2ImVHSpec Dimensions: ('Time', 'C2Range', 'C2Vel') Shape: (1220, 53, 512) Data Type: float32 Name: Imaginary part of covariance spectrum: Chirp 2 Units: mm⁶/m³ _FillValue: -999.0

Variable Name: C3VSpec Dimensions: ('Time', 'C3Range', 'C3Vel') Shape: (1220, 265, 256) Data Type: float32 Name: Doppler spectrum at vertical polarization: Chirp 3 Units: mm⁶/m³ _FillValue: -999.0

Variable Name: C3HSpec Dimensions: ('Time', 'C3Range', 'C3Vel') Shape: (1220, 265, 256) Data Type: float32 Name: Doppler spectrum at horizontal polarization: Chirp 3 Units: mm⁶/m³ _FillValue: -999.0

Variable Name: C3ReVHSpec Dimensions: ('Time', 'C3Range', 'C3Vel') Shape: (1220, 265, 256) Data Type: float32 Name: Real part of covariance spectrum: Chirp 3 Units: mm⁶/m³ _FillValue: -999.0

Variable Name: C3ImVHSpec Dimensions: ('Time', 'C3Range', 'C3Vel') Shape: (1220, 265, 256) Data Type: float32 Name: Imaginary part of covariance spectrum: Chirp 3 Units: mm⁶/m³ _FillValue: -999.0