

RADAR DATA EXCHANGE AND FORMAT

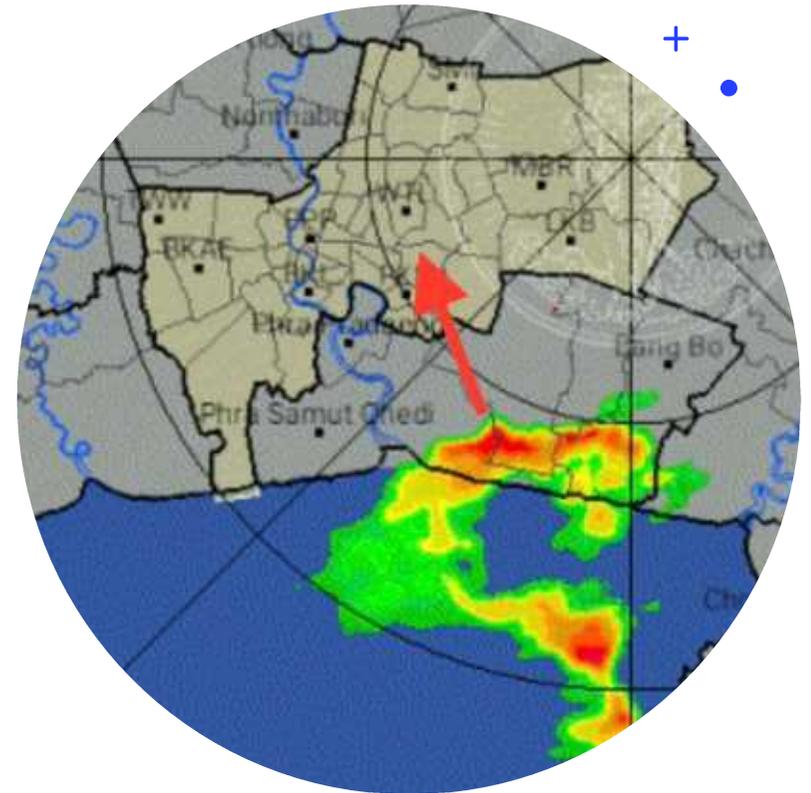


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Introduction

The radar data is stored in various formats.

1. NEXRAD Level II (WSR-88D)
2. CFRADIAL (CF-Radial)
3. ODIM (Opera Data Information Model)
4. HDF5 (Hierarchical Data Format version 5)
5. UF (Universal Format)
6. etc.



Common Climate Data Formats

Data formats commonly encountered in climate research fall into 3 generic categories:

1. GRIB
2. netCDF
3. HDF

Dennis Shea (NCAR)





GRIB1: GRIdded Binary (Edition 1), World Meteorological Organization

GRIB2: GRIdded Binary (Edition 2), World Meteorological Organization

netCDF3: Network Common Data Form, (Version 3.x), Unidata (UCAR/NCAR)

netCDF4: Network Common Data Format, (Version 4.x), Unidata (UCAR/NCAR)

HDF4: Hierarchical Data Format, (Version 4.x), NCSA/NASA

HDF4-EOS2: HDF4-Earth Observing System, (Version 2; georeferenced data)

HDF5: Hierarchical Data Format, (Version 5.x), NCSA/NASA

HDF5-EOS5: HDF5-Earth Observing System, (Version 5; georeferenced data)

GeoTIFF: Georeferenced raster imagery



GRIB2 (grib edition 2) is a standard format sponsored by the WMO for the transmission of gridded data between the national meteorological centers

Wesley Ebisuzaki (2013) and WMO-No. 306



GRIB2 is a transmission format so compression is a high priority. Starting with a GFS forecast file, converting it to netcdf-3 increases the file size by 6.4 times

Wesley Ebisuzaki (2013)

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WMO CF Extensions

ACTIVITY AREAS (1)

- [WMO Information System \(WIS\)](#)

EXPERIMENTAL CF-NETCDF PROFILES FOR MARINE AND WEATHER RADAR DATA

Data Standard

The WMO extensions to the Climate and Forecast Conventions (CF conventions) for netCDF (WMO-CF extensions) aim to reduce the effort involved in specifying data products and ensure interoperability by providing standardized semantics and metadata. The level of standardization provided by the WMO-CF extensions is in many cases greater than what is provided by the CF conventions to satisfy the specific WMO operational needs to support Earth System monitoring and prediction. New netCDF profiles are defined to act as templates for reporting data from different sources.

Data Profiles

The WMO-CF profiles implement the WMO-CF extensions by providing templates for different types of data, both observational and model-based. General regulations are provided to ensure consistency overall interoperability and consistency between different WMO-CF profiles. The first draft version is available on the [WMO SharePoint](#).

Coordinates, dimensions, and groups are standardized and mandatory metadata specified in each WMO-CF profile. Two observational profiles are currently defined.

The **WMO-CF RADIAL** profile should be used for the representation of weather radar and lidar data in the native instrument-centric polar coordinates. The first draft version is available on the [WMO SharePoint](#).

The **WMO-CF MARINE TRAJECTORY** should be used for the reporting of meteorological and/or oceanographic observations along one or more trajectories, including both at or near the ocean surface and at depth. The first draft version is available on the [WMO SharePoint](#).

The **WMO-CF UAS TRAJECTORY** should be used for the reporting of meteorological, atmospheric chemistry and air quality observations along one or more trajectories from a single platform. The trajectory may follow an undulating profile. The first draft is available on the [WMO Sharepoint](#).



Summary

There are many formats for radar data. However, the exchange of data should be in the same format. This project started using the exchange under GRIB Format. However, The WMO's recommendations about data exchange will be the direction for our regional data exchange too.



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THANK YOU