Issues for Swath Data in CF

2017 EarthCube netCDF-CF Workshop

EARTHCUBE
TRANSFORMING GEOSCIENCES RESEARCH

unidata

Aleksandar Jelenak

The HDF Group

What We Call Swath Data?

- Electromagnetic radiation collected from a specific direction into a solid angle and then measured at a number of intervals of the electromagnetic spectrum
- Data collected by instruments on satellites, airplanes, and unmanned aerial systems
- Original instrument viewing geometry

Issue #1: Storing Lat/Lon and Projection Coords

- Current CF convention *seems* to require providing lat/lon coordinates *in addition* to any other type of coordinates
- Such swath files may be very large, precluding efficient distribution
- Suggestion: Relax the CF requirement to only one geo-coordinates *of any type* (lat/lon or projection)

Issue #2: Groups in Swath Data Files

- Many swath files use groups
- CF does not support groups
- Many swath data providers are forced to guess/improvize what is the best practice for using groups
- Common approach: Test your software tools with files with groups and if they work use them

Issue #3: Subsampling Lat/Lon Coordinates

- NOAA Level 1B or HDF-EOS formats allow this
- More applicable and safer to use for swath data with small geospatial extent (airborne, unmanned aerial system)

Issue #4: Different Standard Name Vocabularies

- Having their own standard name vocabulary may be easier and more applicable for large satellite data providers or very specialized communities
- Avoids *There Can Be Only One* (Vocabulary) issue
- CF already can support one vocabulary different from its own
- What is needed is mix-and-match capability (per variable)