Storing and Organizing ARM Program Measurements Documentation for Data Quality Purposes

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Wiki Overview and Features

Wiki Theory

The ARM Data Quality Office has implemented a Wiki system to house documentation and instructional material. Some benefits of this system include:

- New web pages are easily created and automatically linked

- Anyone can create or edit any page, allowing creative displays of information

- Pages are edited from a web browser and changes are instantaneous **(a)**
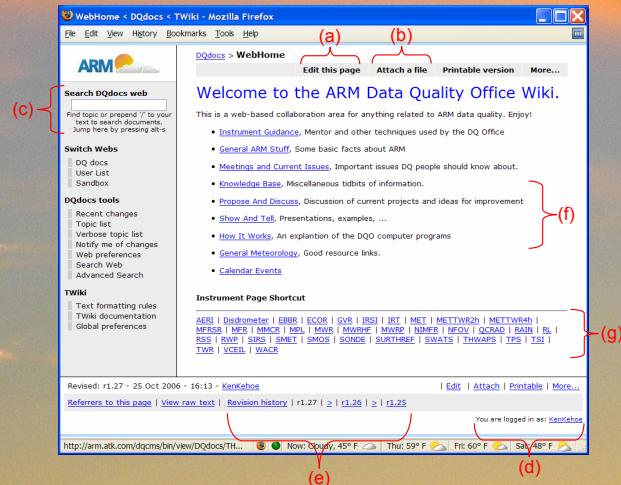
Data Quality Office Wiki Features

- Attach any type of file **(b)**

- Text and topic search box **(c)**

- User login tracks who made changes and allows for verification of technical edits **(d)**

- Version history of all changes including text and images **(e)**

- Documentation of Data Quality Office Processes **(f)**

- Dynamic quick links to instrument documentation at the bottom of every page **(g)**

Wiki Screenshot Examples

Specific Information Available

- Dynamically generated table of contents **(h)**

- Recent changes highlighted **(i)**

- Link to official ARM instrument page **(j)**

- Link(s) to similar instrument Wiki page **(k)**

- General description of instrument **(l)**

- Example plots of good/bad data, and comparison plots & criteria for making cross-instrument comparison **(m)**

- Subtle but important issues **(n)**

- Typical problems **(o)**

- Much, much more …

ECOR Instrument Page

Example plots of good/bad data **(m)**

A good way to detect problems with one of the radars at the SGP CF is to compare the MMCR with the WACR. Here is an example of a failure with the MMCR Traveling Wave Tube (TWTA). Notice how the two compare well early in the day, but then later on the MMCR misses some clouds as compared with the WACR. The missing data at the end of the MMCR plot may not be part of the problem and should not be expected for this problem to occur.

Example of known problem **(n)**

At high latitudes the MFRSR is not able to record correct data for a full 24 hours/day. Durring days without sunrise/sunset (NSA Summer) the shadow band is not able to make a full rotation because the band would strike the support arm. To ensure the instrument is not dammaged, the MFRSR is programed to stop recording data and enter sleep mode +/- 2 hours of local solar midnight. The NIMFR does not have this problem and will continue to record data. This means the comparison plot of the two will not match +/- 2 hours of local midnight.
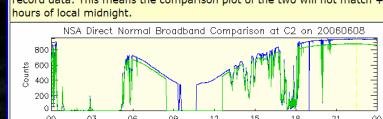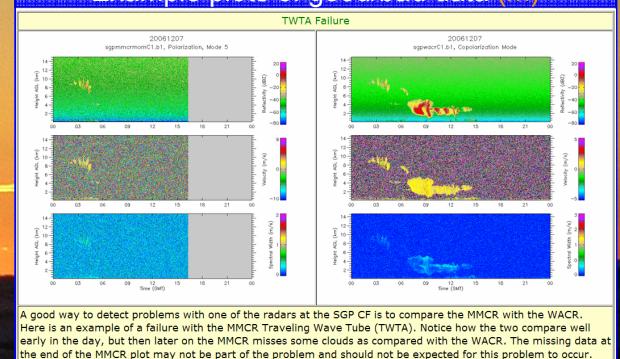
Typical Problem **(o)**
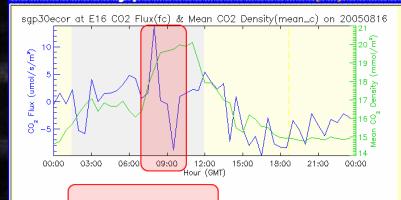
Figure 9. Large spikes (positive and negative) in CO2 flux (*fc*) can occur when the flux is essentially zero. This is also a condition that should not be reported as incorrect. The mentor will look at the data closely and report in their ECOR IMMS monthly report if they think that the data is incorrect.