

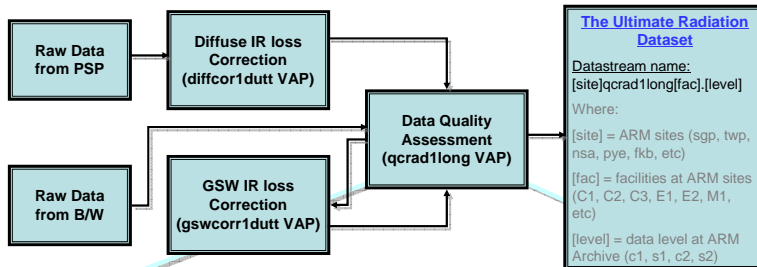
# The Ultimate ARM Radiation Measurement Data

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## Introduction

Since the beginning of the ARM program, surface broadband radiation data have been collected continuously at the three primary ARM sites (SGP, TWP, and NSA). Broadband radiometers were also included for each ARM Mobile Facility (AMF) deployment to provide continuous observations. To ensure data quality, correct for known measurement problems, and enhance data continuity for these data, a series of Value Added Products (VAP) have been developed. Our goal is to provide ARM users with an ultimate radiation data set. This poster summarizes the work we have done and the ultimate radiation measurement product we have generated and made available for users to order at the ARM Archive. Examples of this product for the AMF Point Reyes deployment are shown.

## Data Processing Flowchart



### Data Tests Applied

- Physically Possible Limits based on global analysis per BSRN
- Extremely Rare Minimum Limits based on global analysis per BSRN
- Comparison Tests based on global analysis per BSRN
- Climatological (Configurable) Limits
- Climatological (Configurable) Comparisons

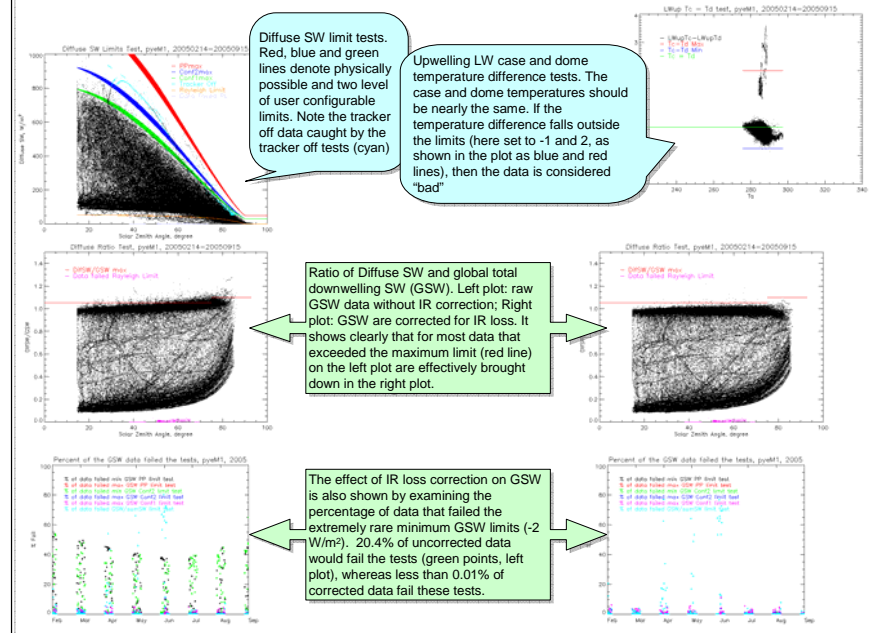
## Output Products

- Irradiances => total downwelling SW, diffuse and direct normal SW, upwelling SW, downwelling and upwelling LW, and best estimate of total downwelling SW
- Radiometer case and dome temperatures
- Surface meteorological measurements => relative humidity, air temperature, air pressure, wind speed, wind direction, and precipitation.
- QC fields => data quality test results of the corresponding fields

## Example Results

Below are selected yearly summary plots of ARM Mobile Facility data at Pt. Reyes. Daily quicklooks are available at:

<http://c1.dmf.arm.gov/data/process/vap/calendar/ql.php>



## Summary

**QCRad VAP output is now the ARM recommended measure for surface radiation data for all ARM sites.**

- Qcrad1long c1 level data at the fixed sites are available at the ARM archive (<http://www.archive.arm.gov/>). C2 level data and data at mobile facilities are being processed currently and will be available to users soon. The c1 level data are processed on a daily basis with generically corrected IR loss for GSW. Whereas c2 level data are processed after radiometers swap each year so final corrections of GSW IR loss can be performed.
- Corresponding s1 and s2 level data are also available at Archive which contain the same radiation fields and summarized QC information. Users are advised to use s2 or c2 level data when available.
- For more information, see web pages and technical reports for DiffCor VAP, GSWCorr VAP, and QCRad VAP at the following link:

[http://www.arm.gov/data/vaps\\_all.php](http://www.arm.gov/data/vaps_all.php)