Overview
- Develops tools and procedures to perform automated and manual data quality (DQ) inspection of over 5000 different measurements from 350 datastreams
- Processes ~500 MB of data each hour and creates over 3000 plots per day
- Uses metric tables and plots to inspect the data and identify sensor failures
- Summarizes results in weekly DQ Assessment reports sent to key personnel
- Creates DQ Problem Reports to track and resolve detected problems

Millimeter Wavelength Cloud Radar
- Track scatterer classification over many years to validate radar calibration
- Simplified daily metric to alert instrument mentor of potential problems

G-Band Vapor Radiometer
- Implemented an algorithm which uses GVR brightness temperatures to estimate liquid water path (LWP) and precipitable water vapor (PWV)

Comparison Plots
- PWV (top) and LWP (bottom) values from the NSA Microwave Radiometer (MWR, red), MWR Profiler (MWRP, blue/purple), and GVR (black)

LWP Distributions
- Time-synchronized comparison of estimated LWP indicates that GVR retrievals have less variability and return less liquid than MWR retrievals from February 2010

Recent Data Quality Tools
- Automated e-mails summarizing instrument stability
- Notifications of calibration changes
- Long-term datastream statistics to detect shifts or unusual trends indicating possible DQ problems
- Millimeter Wavelength Cloud Radar (MMCR) tools
- G-Band Vapor Radiometer (GVR) tools

Background Image Courtesy: U.S. Department of Energy's Atmospheric Radiation Measurement Program