

Preliminary Characterization of Calibration Errors in the CMDL Water Vapor Record

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The CMDL frostpoint hygrometer uses a calibrated thermistor to measure the temperature of the chilled mirror during operation. This temperature is directly correlated to water vapor mixing ratio. Accurate thermistor calibration is, therefore, critical. A standard thermistor has been included in every calibration batch since 1984. By looking at historical standard thermistor data, three distinct regions were identified throughout the time series. The transitions between regions are examined for significant sources of error. This poster will focus on quantifying the sources of calibration error throughout the history of CMDL water vapor data.

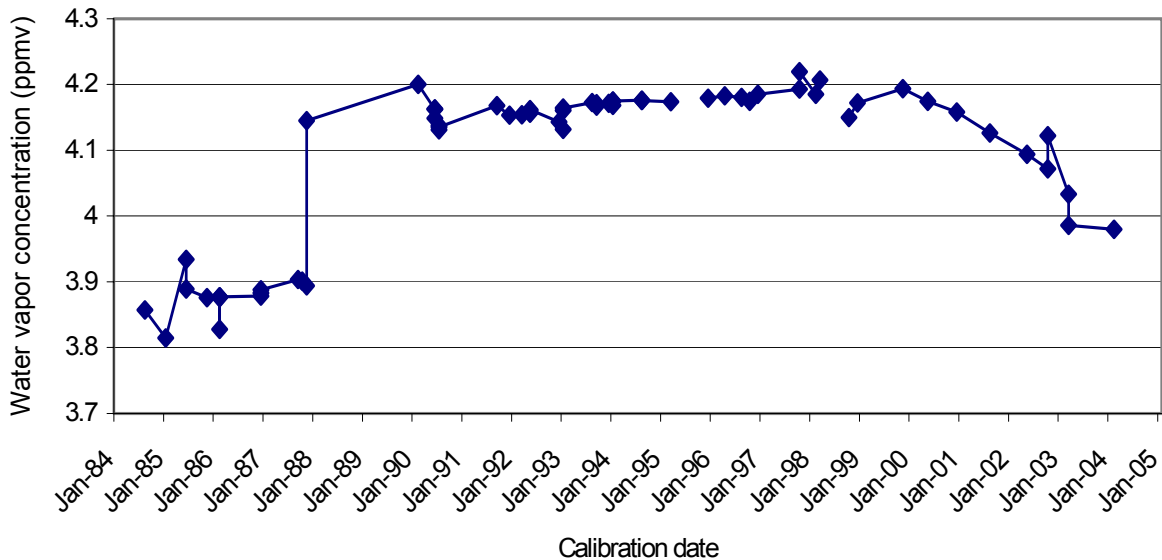


Figure 1. Graph depicts time series of standard thermistor calibration measurements, extrapolated to approximate atmospheric water vapor concentrations.