

# Wind Sensor Comparison – Lufft Ventus-UMB vs. RM Young 5103, Summit Station Greenland – July 2015 to April 2016

M. O'Neill<sup>1,2</sup>, R. Stillwell<sup>3</sup> and R. Neely III<sup>4</sup>

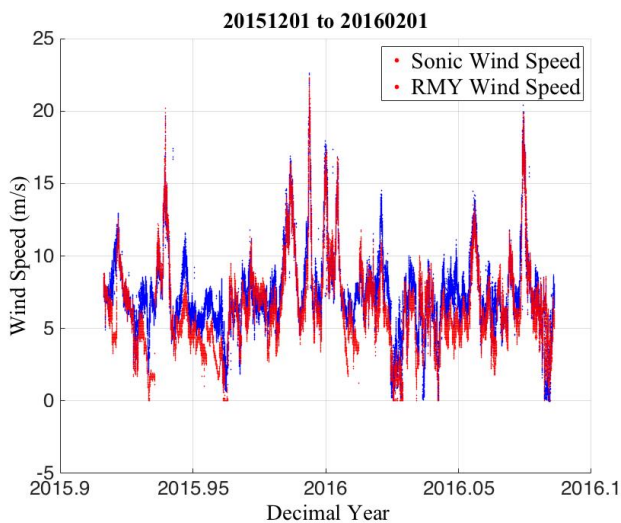
<sup>1</sup>Cooperative Institute for Research in Environmental Sciences (CIRES), University of Colorado, Boulder, CO 80309; 303-497-4294, E-mail: michael.oneill@noaa.gov

<sup>2</sup>NOAA Earth System Research Laboratory, Global Monitoring Division (GMD), Boulder, CO 80305

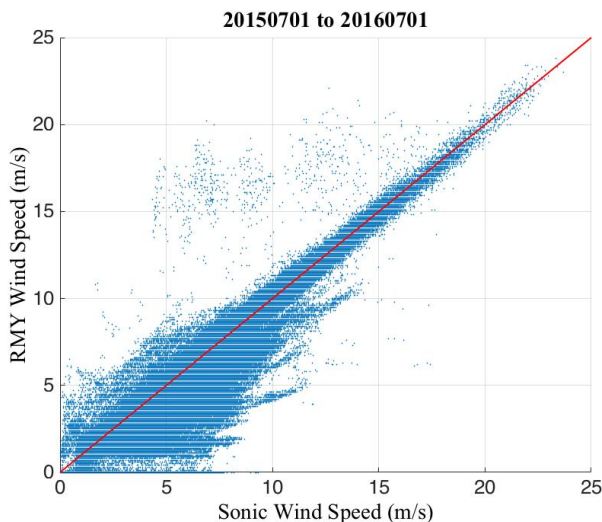
<sup>3</sup>University of Colorado, Department of Aerospace Engineering Sciences, Boulder, CO 80309

<sup>4</sup>School of Earth and Environment National Centre for Atmospheric Science, University of Leeds, Leeds LS2 9JT, United Kingdom

NOAA ESRL/GMD has been conducting a side-by-side comparison of a Lufft Ventus-UMB heated ultrasonic wind sensor and a RM Young model 5103 wind monitor at Summit Station, Greenland since July 2015. We compared the performance of three instruments on the tower, located next to the Temporary Atmospheric Watch Observatory. The instruments are co-located at 9, 10 and 14.5 meter heights on the tower. Our analysis shows comparable performance for all wind speeds above 5 m/s but substantial discrepancies below 5 m/s. During the observation period, our analysis also demonstrates that the 5103 wind monitor under-reported the wind speeds 17% of the time. It also reported conditions that unnecessarily required curtailed station operations for a total of 7.5 days. Our findings indicate the 5103 wind monitor is not reliable below 5 m/s in Arctic conditions.



**Figure 1.** Sonic and RM Young Time Series.



**Figure 2.** Sonic Wind Speed vs. RM Young Wind Speed.