Quality Assurance Methods for Ground-Based Meteorological Remote Sensors

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Abstract

Methods for traditional in-situ measurements of meteorological variables have evolved over many years and the associated quality assurance procedures have matured to some generally accepted standards. Ground based remote sensing methods for winds and temperature are relatively new and until recently have only been used in limited applications for routine measurements. While technologies such as sodars, radar wind profilers and radio acoustic sounding systems (RASS) have been around for 10 to 20 years in research applications, they are relatively new to the routine operational user community. Within the last five years there has been a concerted effort to develop guidelines for the use of remote sensors for routine applications where data are collected to address regulatory needs. Associated with these guidelines are recommended quality assurance (QA) methods to accompany and oversee the operations. These methods help establish confidence in the operations and provide an independent assessment of the data collected. An overview of QA methods for ground based remote sensors currently being implemented on programs focused toward meeting USEPA guidelines is presented.