GOES-R AWG Visibility Retrieval

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This poster presents an update on the status of the GOES-R Advanced Baseline Imager (ABI) visibility retrieval development and demonstrates the utility of the ABI visibility retrieval to monitor reduced visibility due to regional haze associated with western wildfire activity. The V4 algorithm uses multiple regression approaches instead of simple bias correction to improve the categorical skill of the algorithm. The 10 predictors for V4 aerosol visibility consist of 1) AOD, 2) temperature at the top of the PBL, 3) 2m temperature, 4) height of the PBL above sea level (including topography), 5) PBL lapse rate, 6) first guess aerosol visibility, 7) 2m relative humidity, 8) relative humidity at the top of the PBL, 9) PBL mean relative humidity, and 10) PBL depth. The 11 predictors for V4 fog visibility consist of 1) fog probability, 2) PBL mean relative humidity, 3) relative humidity at the top of the PBL, 4) height of the PBL above sea level (including topography), 5) 2m relative humidity, 6) PBL lapse rate, 7) PBL depth, 8) 2m temperature, 9) first guess fog visibility, 10) temperature at the top of the PBL, and 11) COT. Assessment of V4 visibility product measurement accuracy relative to ASOS surface visibility measurements shows a 66.9% categorical success rate during May-June 2010. This is significantly better than the V3 algorithm for the same period, which had an accuracy of 59.26%, but still less than the design threshold of 80% categorical success rate.