Introduction of A Day/Night, Object-Based, Quantitative Fog/Low Cloud Detection Algorithm for GOES-R.

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The GOES-R fog/low cloud detection product is a day/night, object-based algorithm designed to quantitatively identify single layer clouds that produce Instrument Flight Rules (IFR) conditions, defined as having a cloud ceiling below 1000 ft (305 m) above ground level (AGL) or a visibility less than 3 miles. Surface visibility is not available for the GOES-R algorithm so the GOES-R fog product returns a probability that the cloud ceiling is below 1000 ft (305 m) AGL. At night, the 3.9 and 11 μm channels are used for detection while during the day the 0.65, 3.9, and 11 μm channels are required. The fog detection algorithm utilizes textural and spectral information, as well as the difference between the cloud radiative temperature and surface temperature.