**GOES-R Fog/Low Stratus (FLS) Fact Sheet**

The full GOES-R FLS training module is available at:

 <http://cimss.ssec.wisc.edu/goes_r/proving-ground/SPC/SPC.html>

**Traditional 3.9-11 Micron BTD Limitations that the GOES-R Products Address**

* The traditional BTD product is influenced by reflected sunlight during the day
* It is difficult to differentiate between FLS and nonhazardous elevated stratus clouds using the traditional BTD product
* The traditional BTD product does not provide any information when multiple cloud layers are present
* Shallow fog layers are difficult to detect

**The GOES-R approach seeks to mitigate the weaknesses of the traditional BTD product**

* The GOES-R Fog/Low Stratus (FLS) probability product is a merged product blending satellite, numerical weather prediction model (GFS and RAP), static ancillary (e.g., DEM, surface emissivity) and daily SST data using a Naïve Bayesian model.
* The following GOES-R FLS products will be available in AWIPS using GOES East, GOES West, and MODIS:
1. The probabilities that Low Instrument Flight Rules (LIFR), Instrument Flight Rules (IFR) and Marginal Visual Flight Rules (MVFR) conditions are present **[LIFR/IFR/MVFR Probability]**
* LIFR conditions = surface visibility < 1.0 statute miles and/or cloud ceiling < 500 feet
* IFR conditions = surface visibility < 3.0 statute miles and/or cloud ceiling < 1000 feet
* MVFR conditions = surface visibility < 5.0 statute miles and/or cloud ceiling < 3000 feet
1. An estimation of the thickness (cloud base to cloud top) of the cloud layer (not recommended for use in AK at this time) **[Cloud Thickness]**.
* The GOES-R FLS products are available both day and night
* The quantitative approach of the GOES-R FLS probability products gives forecasters a confidence level that FLS is present (the higher the probability the more likely it is that LIFR/IFR/MVFR conditions are present)
* The GOES-R FLS thickness product can be used to estimate dissipation time after sunrise for radiation fog events (not recommended for use in AK at this time)
* The GOES-R FLS products are also available from 1 km MODIS data, allowing for the detection of smaller scale events such as valley fog

**GOES-R FLS Product Caveats**

* There will be some discontinuities in the FLS probabilities during the day/night transition as different predictors are used for day and night, but probabilities will always be available
* There will be some discontinuities in the FLS probabilities at the RAP domain boundaries (outside of CONUS) where the NWP being used changes from the RAP to the GFS
* The FLS thickness product is only valid for near-surface single layer water clouds
* The FLS thickness is not available just after sunrise and just before sunset

**For recent examples visit the UW CIMSS “Fog Blog”**

* <fusedfog.ssec.wisc.edu>