



Aerosol Monitoring and Modeling Activities

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Aerosol Monitoring/Modeling Activities

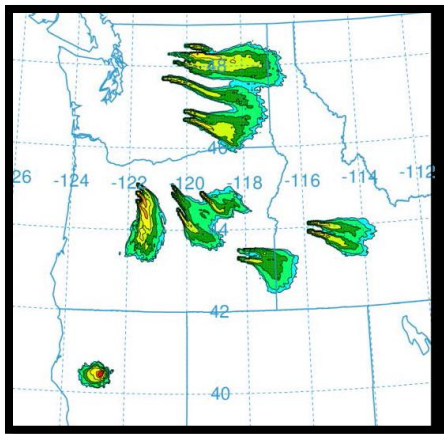


- DOD/Army Research Lab : micro-scale dust modeling
- DOD/Navy – NAAPS
- DOE/ ARM & AMT programs
- NASA
 - Satellite Aerosol Detection (Aqua,Terra, VIIRS...)
 - GEOS-Chem
- NOAA/NWS & U.S. EPA :
 - CMAQ full aerosol modeling, HYSPLIT smoke/dust/asg regional prediction
 - NGAC Global dust prediction
 - **Next Generation Global Prediction Systems (NGGPS)**
- NOAA/OAR:
 - HYSPLIT dispersion model R&D
 - Air quality field campaigns (DISCOVER-AQ,CALNEX...), WRF-Chem -smoke
- NOAA/NESDIS
 - GOES Aerosol Satellite Product (GASP), IDEA web site...
 - **Joint Polar Satellite System (JPSS)**
- U.S. Forest Service
 - BlueSky emissions framework, smoke prediction

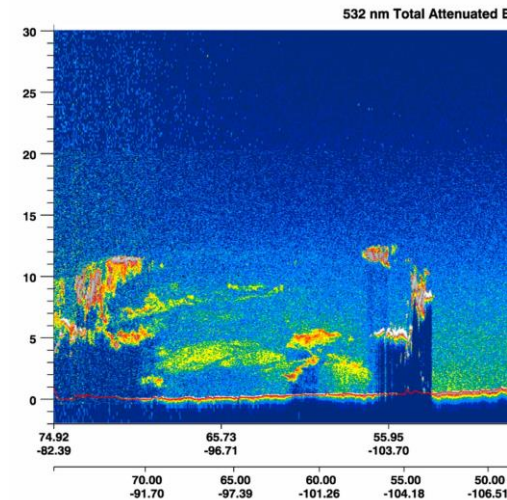
Goals

Identify existing aerosol dispersion model capabilities

- Utility of smoke/dust/volcanic ash products for dispersion model evaluation
- Emerging aerosol programs (JPSS, NGGPS, Testbeds..)
 - Use of current/future satellite instruments
 - In-line coupling of aerosol and meteorological processes
 - Dispersion/Aerosol Model Testbeds
 - Probabilistic/Ensemble approaches
 - Modeling in complex terrain.



NAM Nest – HYSPLIT 4 km smoke predictions.



CALIPSO overpass of July 24, 2014 major Canadian fires. Complicated multi-layer plume pattern observed.



Questions

Future Science Priorities

- Can dust/smoke events be used to evaluate dispersion models for other applications ?
- What additional data would be useful for initializing aerosol models ?
- What current and future satellite data could be provided to characterize plume better ?
- What work is being done on modeling in complex terrain ?
- What field experiments could be leveraged to evaluate dispersion models ?
- Community moving towards higher resolution dispersion:
 - What data/modeling capabilities would be important
 - Higher frequency meteorological model outputs (<15 min)
 - Inline coupled models
 - Land use/marine initial characteristics
 - Ensembles