

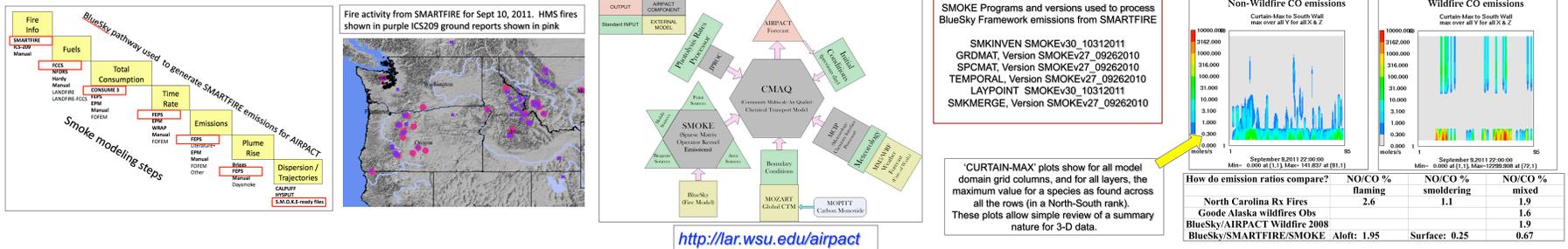
AIRPACT is Testing BlueSky Framework with SMARTFIRE for Wildfire Emissions for Air Quality Forecasting in the Pacific Northwest

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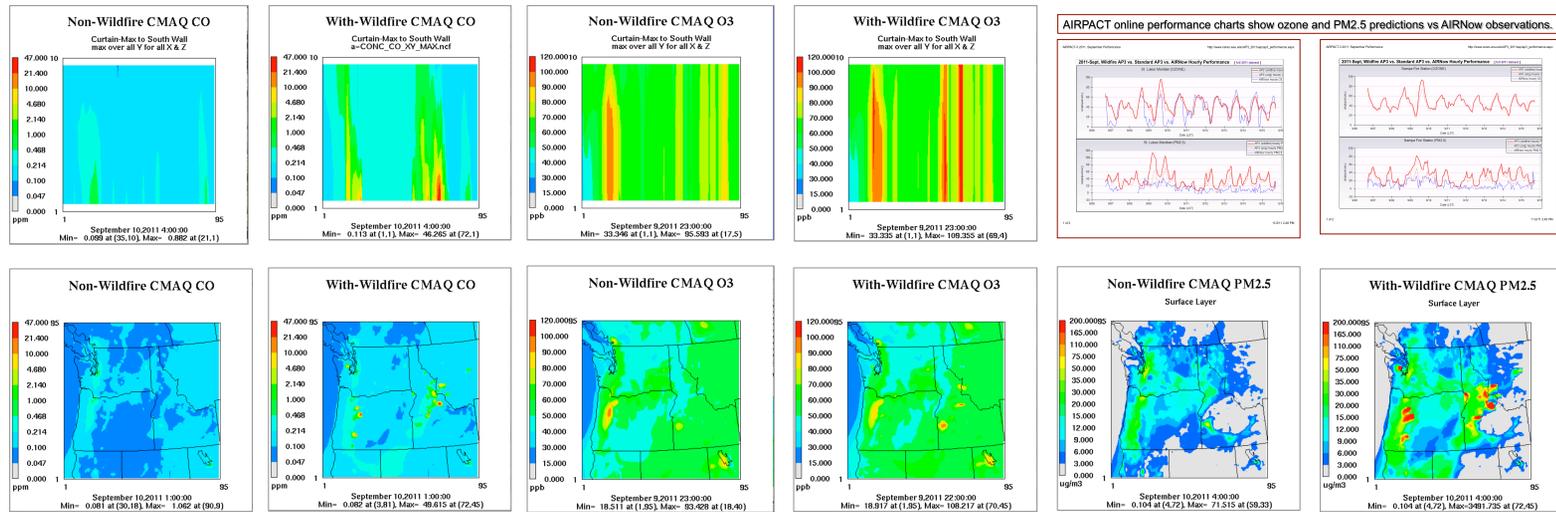
Abstract:

Since 2001, AIRPACT has been building toward a one-atmosphere decision-support system addressing air quality for the Pacific Northwest region of the U.S.A. In 2008, AIRPACT-3 operated using wildfire emissions provided by the USDA Forest Service AIRFire Lab from the BlueSky system. The subsequent BlueSky system redesign as a framework, and the addition of options for using SMARTFIRE (a fire activity aggregator that uses the NOAA Hazard Mapping System and ground reports) for fire emissions, caused a redesign of the AIRPACT wildfire ingest processing. The BlueSky-generated emissions are processed using SMOKE before being blended with the AIRPACT emissions from other sectors and passed to CMAQ. This poster details the new AIRPACT wildfire emissions processing using SMARTFIRE and BlueSky and compares AIRPACT CMAQ results for ozone and PM2.5, between runs with and without the new SMARTFIRE wildfire emissions, for September 2011.

Emissions: The SMARTFIRE-FCCS-Consumev3-FEPS pathway was invoked in The BlueSky Modeling Framework to walk from fire activity to fuel loading, consumption of fuels, to finally generate SMOKE-ready speciated fire emissions. These emissions, specified in 'ida' and 'ems95' formats contained hourly plume top, bottom, and layer-1-fraction; and hourly emissions for PM2.5, PM10, CO2, CO, NH3, NOx, SO2 and VOCs. Emissions were processed through SMOKE resulting in SAPRC-speciated emissions for CMAQ. CO emissions for the non-wildfire and the wildfire contributions are shown below for September 9, 2011.



CMAQ Results: Curtain-Max and/or surface layer plots for CO and O3 and PM2.5, plus comparisons to AIRNow observations.



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WHAT NEXT: Compare SMARTFIRE AIRPACT NO2 result with AURA satellite OMI tropospheric NO2 columns.