4.4 Adding wildfire smoke in real-time WRF forecasts.

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Wildfire smoke has become far more widespread, dense, and persistent over the western U.S. during the past several years. As a result of a substantial aerosol layer aloft from the wildfires, maximum surface temperatures have been suppressed by as much as 10-15°F at times, resulting in the WRF model being too cool on several days.

This paper will describe the temperature errors observed in WRF simulations during wildfire smoke episodes over the Pacific Northwest during the past several summer and will describe our attempts to deal with the problem. Specifically, the aerosol-aware Thompson Eidhammer scheme is applied using smoke aerosols distributions available from a variety of sources, including the CMAQ air chemistry model with fire emissions run by Washington State University. The talk will describe the impacts of surface temperature and other parameter verification using our “wildfire” smoke-aware system