P17   Chemical characteristics and ozone production in the Northern Colorado Front Range.

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We use the extensive set of aircraft and ground-based observations from the NSF/NCAR and State of Colorado Front Range Air Pollution and Photochemistry Éxperiment (FRAPPÉ) and the NASA DISCOVER-AQ experiments in summer 2014 together with WRF-Chem simulations to study the ozone production and chemical regimes in the Northern Colorado Front Range (NFR). We apply the Integrated Reaction Rate (IRR) capability that will be released with WRF-Chem version 4 and the chemical tendencies diagnostics and present preliminary results from an in-depth analysis of the ozone formation in various NFR regions for a case study of 12 August 2014. We further apply these diagnostics along WRF online trajectories to assess the chemical evolution of air masses as they are transported from the NFR to the mountains during upslope events. The results show efficient ozone production within the NFR driven by high NOx and high VOCs (specifically higher alkenes and aldehydes) and also continued ozone production during the transport into the mountains.