

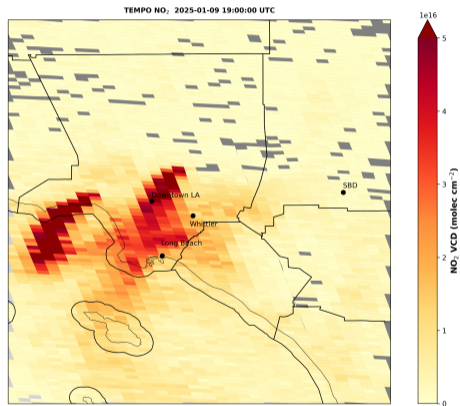
Effects of Wildfire Smoke on TEMPO and Pandora Agreement over Whittier, California

Peter Peterson^{1,*}

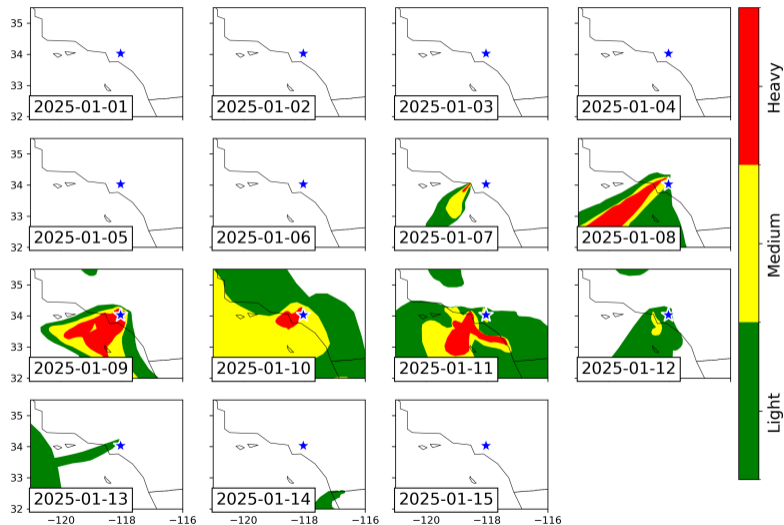
¹Department of Chemistry, Whittier College

June 16th, 2026

Southern California frequently impacted by wildfires

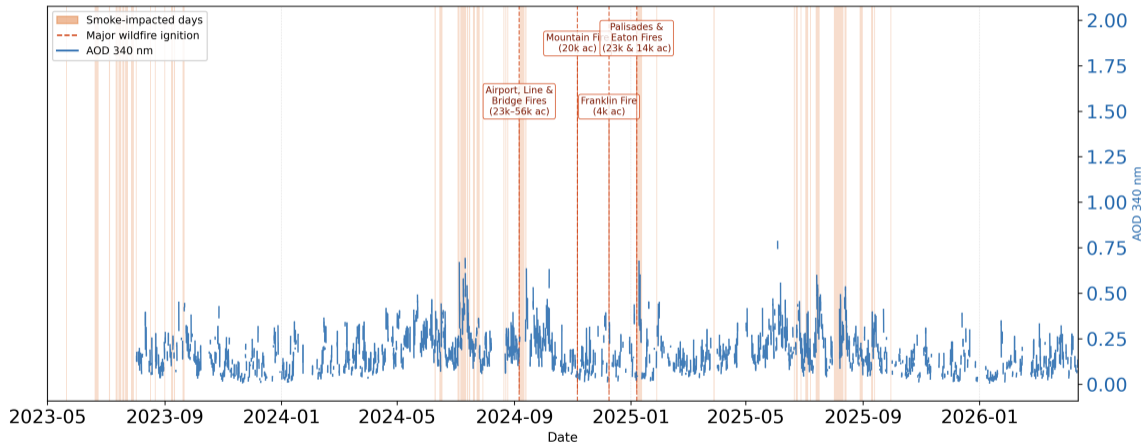


Use NOAA HMS to Determine Impacted Days

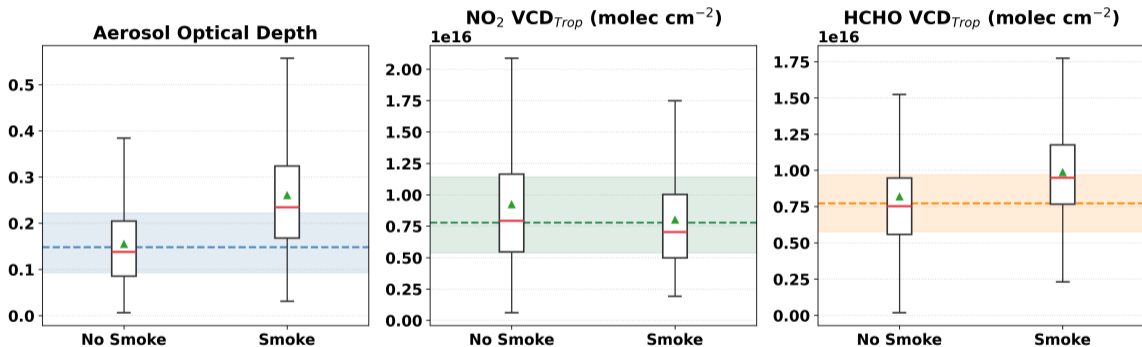


How often are we impacted? Not just local!

Whittier/LA Basin Smoke Impact & Major Southern California Wildfires

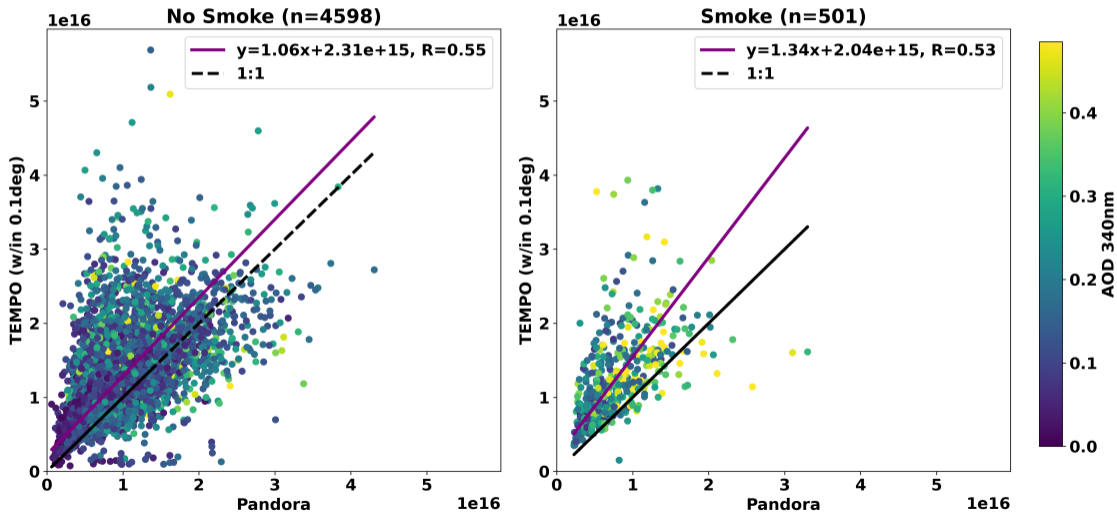


What does this look like on the ground?



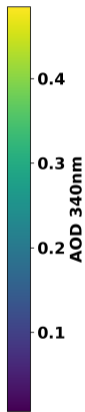
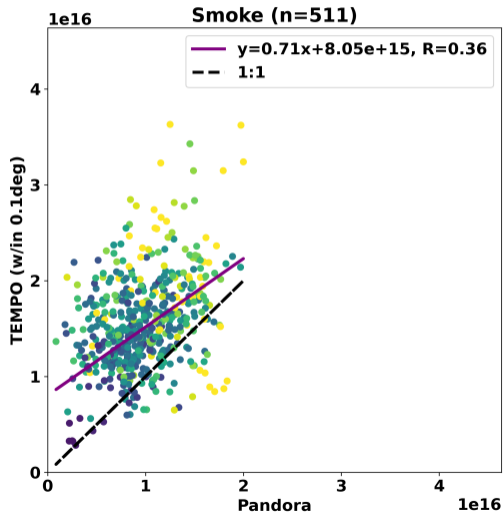
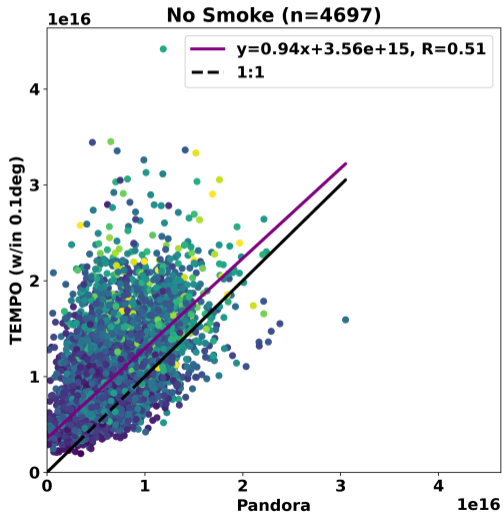
Impacts on TEMPO Pandora Agreement (NO₂)?

Pandora vs TEMPO NO₂ correlation, Whittier CA



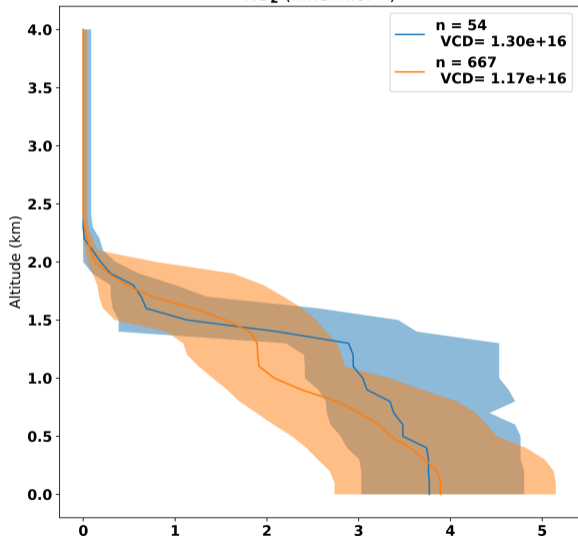
Impacts on TEMPO Pandora Agreement (HCHO)?

Pandora vs TEMPO HCHO correlation, Whittier CA

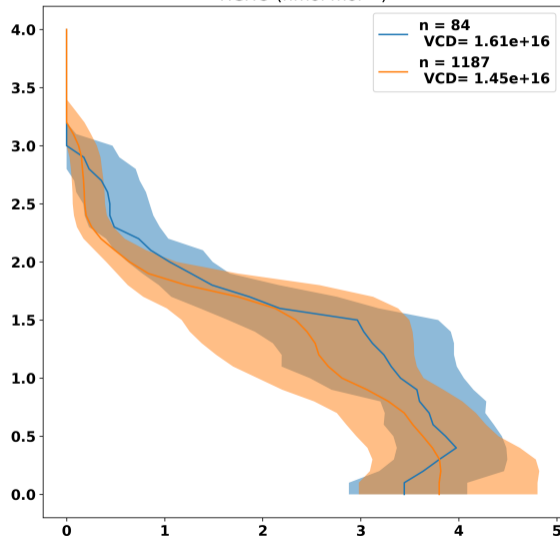


Case Study: Sept 24 Line, Bridge, Airport Fires

NO₂ (nmol mol⁻¹)

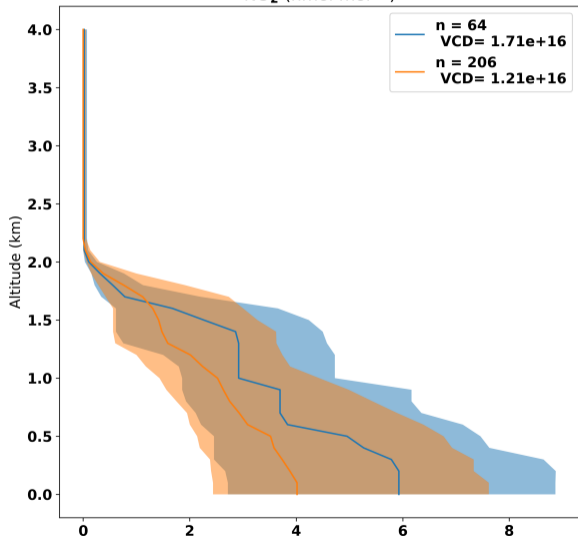


HCHO (nmol mol⁻¹)

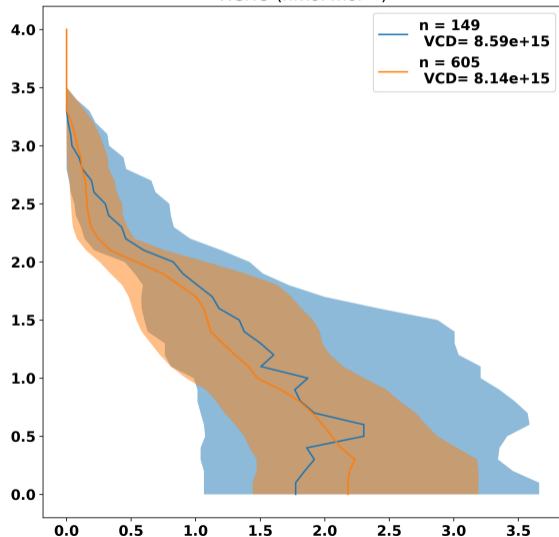


Case Study: Jan 2025 Palisades and Eaton Fires

NO₂ (nmol mol⁻¹)



HCHO (nmol mol⁻¹)



Summing Up

- ▶ Hazard Mapping System Smoke Maps used to categorize 3 years of observations
- ▶ Smoke times are characterized by higher AOD, slightly lower NO₂, and enhanced HCHO, this remains true even when controlling for seasonality
- ▶ Impacts on NO₂ are different for local vs longer range transport smoke, local fires alter profiles of NO₂ and HCHO
- ▶ TEMPO columns for both HCHO and NO₂ are generally higher than Pandora, but these discrepancies are higher during smoke impacted periods, particularly for formaldehyde

Acknowledgments



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