Characterizing Los Angeles aerosol through long-term high-resolution measurements

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The Los Angeles basin is one of the most polluted airsheds in the United States. The region's dense urban landscape and its basin topography have allowed for numerous anthropogenic and biogenic pollution sources to accumulate contributing to decades of poor air quality. Over the past decade, various measurements suggest that despite regulations particulate matter levels in Los Angeles have stagnated, renewing interest in the sources and composition of the aerosol. In this work, we conduct field measurements at an urban site located in Pico Rivera, in Los Angeles County, CA. This site is part of the Atmospheric Science and Chemistry mEasurement NeTwork (ASCENT) and is equipped with a suite of advanced aerosol instrumentation for real-time measurements of fine aerosol chemical composition and properties including an Aerosol Chemical Speciation Monitor (ACSM) for the composition and mass concentration of the non-refractory aerosols, an Xact for monitoring trace metals, an Aethalometer for measuring black and brown carbon, and a Scanning Mobility Particle Sizer (SMPS) for the aerosol number size distribution. We perform Positive Matrix Factorization (PMF) on ACSM data and resolve factors consistent with previous studies in Pasadena, CA, such as hydrocarbon-like OA (HOA), cooking OA (COA), more-oxidized oxygenated OA (MO-OOA), and less-oxidized oxygenated OA (LO-OOA).