

**A Selective Historical Overview of Urban Meteorological Field Campaigns in the U.S.: The Last Half-Century**

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Abstract

There is a rich history of meteorological observations in and around urban areas in the U.S. that quantify the many ways in which urban areas modify ambient atmospheric conditions. In addition to conventional operational observations, there have been a number of special urban field campaigns undertaken over the past sixty-plus years in support of weather, climate and air quality studies. These research campaigns vary in duration from a few days or weeks to several years. In this selective historical overview, we focus most of our attention on these observational campaigns rather than the many important studies that have relied solely on conventional, operational observations and measurements. Also included are laboratory studies conducted in boundary-layer wind tunnel facilities. We provide a succinct summary of more than twenty such studies, and highlight some of their key findings, which have been grouped according to atmospheric phenomena and processes, such as the urban effects on temperature, winds, humidity, precipitation, and surface energy fluxes.