Air Quality, Transportation, and Environmental Justice: A Study in Mexico City and the USA/Mexico Border

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Abstract

Mexico City, along with border cities between Mexico and the United States, have documented high concentrations of criteria pollutants, especially ozone, PM2.5, and PM10. Along with greenhouse gas emissions, these contaminants have a detrimental impact on health and contribute to climate change effects.

Transportation is one of the sectors discussed when addressing air quality and urban climate policies, and in a bilateral context, transportation-related pollutants spread across the border due to changing wind patterns, pointing to the need for US-México collaborations in terms of sustainable transportation methods and approaches to improve urban air quality. Reducing population exposure to air pollutants in cities requires an integrated approach that provides a framework for a modal shift from cars to other sustainable forms of transport.

This seminar focuses on studies in Mexico City and a bilateral effort taking place in the border between Mexicali, Baja California, and Calexico, California, where tools are developed to assess the population standing to benefit from interventions in transportation infrastructure development and the electrification of the public transportation sector.

Background

Sergio Castellanos is an assistant professor in the Department of Civil, Architectural, and Environmental Engineering at the University of Texas at Austin, where he leads the Rapid, Equitable & Sustainable Energy Transitions (RESET) Lab, focusing on equitable pathways for decarbonized energy and transportation systems. Before UT Austin, Sergio worked as a researcher at the University of California, Berkeley, leading bilateral projects between the USA and México, helping bridge the technological gaps between these countries. He holds an Engineering Ph.D. from MIT.