1.089 High resolution simulations of black carbon aerosols and their vertical stratification over Santiago and its transport to the Andean cryosphere.

Early Career Scientist

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Abstract:

Santiago, Chile (33.5°S, 70.5°W, 500 m.a.s.l., 7 millions inhabitants) is a large city situated by the high Andes. It is regularly affected by high particle concentrations (up to 50 µg/m^3) containing black carbón (BC) associated with mainly traffic (diesel combustion), and wood burning but also agricultural burning and fires in summer and fall. To date, it is unclear how far and how often the urban (and peri-urban) pollution plume reaches the Andean cryosphere. Here we explore the region’s complex atmospheric circulation and particularly the transport of traffic and Wood burning BC using a state of the art numerical model, and an updated emission inventory. We compare results against available observations including vertical BC profiles obtained in measuring campaigns in 2013 and 2015.