

Impact of residential combustion and transport emissions on air pollution in Santiago during winter

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© 2018 Elsevier Ltd Santiago (33.5°S, 70.5°W), the capital of Chile, is frequently affected by extreme air pollution events during wintertime deteriorating air quality (AQ) and thus affecting the health of its population. Intense residential heating and on-road transport emissions combined with poor circulation and vertical mixing are the main factors responsible for these events. A modelling system composed of a chemistry-transport model (CHIMERE) and a meteorological model (WRF) was implemented to assess the AQ impacts of residential and transportation sources in the Santiago basin. A two-week period of July 2015 with various days with poor AQ was simulated focusing on the impact on AQ with respect to fully inhalable particles (PM_{2.5}) and nitrogen oxides (NO_x). Three emission scenarios, within the range of targeted reductions of the decontamination plan of Santiago, were tested; namely 50% reduction of residential emission, 50% reduction of transport emissions

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