

ABSTRACT.

This research will present an Air Quality Study in Lima Metropolitan Area (RAML, acronym in Spanish) The objective is to evaluate the performance of the CB06 chemical mechanism (Bond Carbon 06) using the CCATT-BRAMS model (Chemical-Dynamic transport model of air quality).

The CCATT-BRAMS is an Eulerian online model, designed for local and regional studies of atmospheric chemistry from the surface to the stratosphere, including state equations. This model is designed to work with horizontal resolutions ranging from a few meters to more of a hundred kilometers.

The model has a coupling in line with meteorology and chemistry which allows to synchronize time and chemistry simultaneously to form a feedback between the two.

The performance of CBO6 chemical mechanism will be evaluated in this work through statistical methods on Regional Scale, comparing with data in situ in the region, in a study since December to June, 2015. It was worked with the information of the National Service of Meteorology and Hydrology (Senamhi, acronym in Spanish) database from Peru. The emissions inventory used is about the Ministry of Transportation and Communications official inventory.

The results obtained in this research allow to conclude that the model captures basic characteristics of pollutants variations since December to June, 2015; this is due to several causes, first, in December the meteorological variables (light and temperature) are different to June.