

1.204 Study on strategies to reduce photochemical oxidant for each environmental receptor.

Early Career Scientist

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Abstract:

There is concern about adverse effects on human bodies and agricultural crops due to the increase of ozone concentration in the urban areas of Japan. It is considered the reason why the reduction of anthropogenic emissions of NO_x and VOCs, which are main two precursors of ozone, is not linked to the decrease of ozone concentration is because clear grasp of the condition of ozone sensitivity to each precursor is lacking. In this study, the ozone-NO_x-VOC sensitivity in the Kanto region was evaluated by air quality simulations with input emissions of each precursor changed from 0% to 100% by 10%. It was revealed that ozone-NO_x-VOC sensitivity is completely different between the urban areas and their suburbs. In addition, using population and crop yield data, it was also revealed that ozone-NO_x-VOC sensitivity is totally different whether ozone is weighted with population, crop yield, or not. These results suggest it is crucial to evaluate sensitivity of ozone concentrations weighted by each evaluation object and unify them as same indicator such as monetary value for policymakers to decide appropriate emission reduction strategy.