

## Impact of land-use changes on biogenic emissions and formation of ozone and secondary organic aerosols in China from 2013 to 2017

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Biogenic volatile organic compounds (BVOCs) emissions are the major source of secondary organic aerosol (SOA) and ground-level ozone (O<sub>3</sub>), and are harmful to human health, especially in urban areas. However, with the rapid growth of urbanizations, changes in land-use in China will result in inaccuracies in the understanding of regional BVOCs emissions. In this study, the Model of Emissions of Gases and Aerosols from Nature version 2.1 (MEGAN2.1) module embedded within the Community Multi-scale Air Quality (CMAQ), coupled with the land-use dataset derived from Moderate Resolution Imaging Spectroradiometer (MODIS), was used to estimate the changes in emissions of BVOCs and their impacts on O<sub>3</sub> and SOA in China from 2013 to 2017. The results would highlight the importance of considering land-use changes due to urbanization in predicting O<sub>3</sub> and SOA.

Keywords: biogenic emissions, land-use, ground-level ozone, secondary organic aerosol, MEGAN2.1