

Biogenic emissions modeling for chemistry and climate models

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Biogenic emissions of trace gases and particles are necessary for the accurate modeling of atmospheric chemistry and climate. The Model of the Emissions of Gases and Aerosols from Nature (MEGAN) has been developed to estimate these emissions at high spatial and temporal resolutions for input to models that simulate canopy, local, regional, and global scales. This presentation will describe the MEGAN framework and examples of various applications. The MEGAN framework is now coupled with several modeling systems, including the regional WRF-chem model and the global Community Land Model within the Community Climate System Model. Recent efforts have been made to improve the model framework, and further, to validate the emission estimates. Other newer efforts to include biological aerosol emissions, such as pollen, are also being developed. Despite advances, the uncertainties associated with the emission estimates remain high.