

# ***Interactive comment on* “Estimation of biogenic volatile organic compound (BVOC) emissions in China using WRF–CLM–MEGAN coupled model” by Lifei Yin et al.**

## **Anonymous Referee #2**

Received and published: 31 January 2020

BVOCs emission shows great impact on atmospheric chemistry and global climate due to its high chemical reactivity and high loads. This study uses a WRF-CLM-MEGAN coupled model to simulate BVOCs emission over China by update the input data. The paper is well written and the structure is well organized. But the key issue is, the paper is lack of innovation. Since a series of previous studies have been conducted to estimate BVOCs emission over China or other regions. The author mentioned that the CLM is originally coupled with earth climate models and the spatial resolution is coarse. This study embedded MEGAN model within WRF-CLM with higher spatial resolution, and improved the input data by using satellite data. But higher resolution and high quality of input data is insufficient, since many previous studies had also updated the input

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data. The author also mentioned that the processes of land biogeophysics, hydrologic cycle, biogeochemistry etc have great impact of BVOCs estimation, but compare with input data, which one is more important on the estimation of BVOCs? Which one has greater uncertainties. Does the performance of BVOCs simulation improve by considering the land surface processes comparing with the BVOCs simulation without the consideration of land surface processes. Furthermore, the spatial and temporal variations of BVOCs over China are quite clear in previous studies. Therefore, what's the main differences and new findings compare with previous studies?

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Interactive comment on Biogeosciences Discuss., <https://doi.org/10.5194/bg-2019-458>, 2020.

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