Evaluation of Eddy Covariance Footprint Models through the Artificial Line Source Emission of Methane

Shuo Liu[1,2], Gang Liu[3], Mi Zhang[4], Yufang Sun[3], Shuangxi Fang[1], Xiaojie Zhen[5], Zhaozhong Feng[4]

[1] Zhejiang Carbon Neutral Innovation Institute, Zhejiang University of Technology, Hangzhou, China, [2] State Key Laboratory of Urban and Regional Ecology, Research Center for Eco-Environmental Sciences, Chinese Academy of Sciences, Beijing, China, [3] State Key Laboratory of Soil and Sustainable Agriculture, Institute of Soil Science, Chinese Academy of Sciences, Nanjing, China, [4] Key Laboratory of Agrometeorology of Jiangsu Province, School of Applied Meteorology, Nanjing University of Information Science & Technology, Nanjing, China, [5] Jiangsu Tynoo Corporation, Wuxi, China

Content of this file

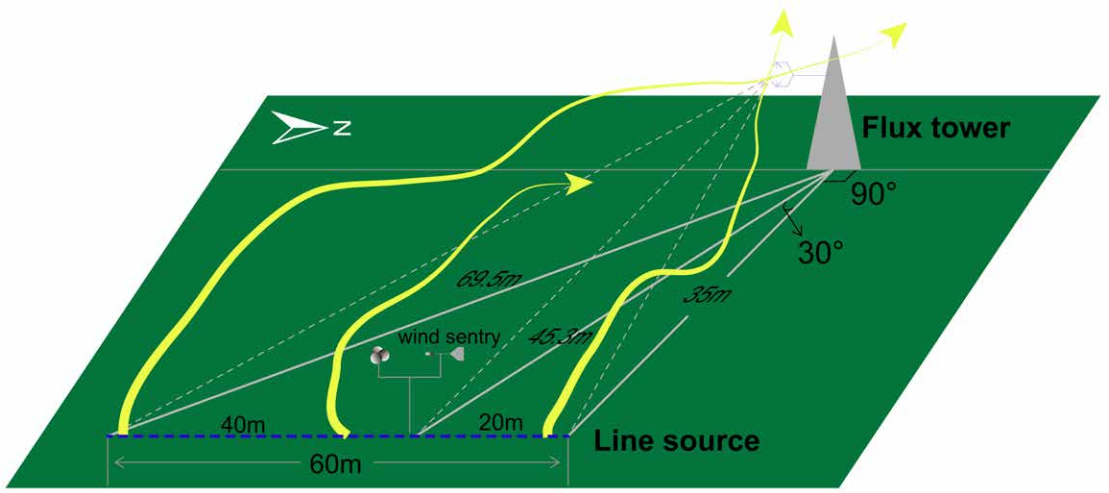

Figure S1. The distribution of the line source and the EC system in the simulated experimental scenario. The arrowed yellow curves simulate the transport pathways of the released CH_4 gases.

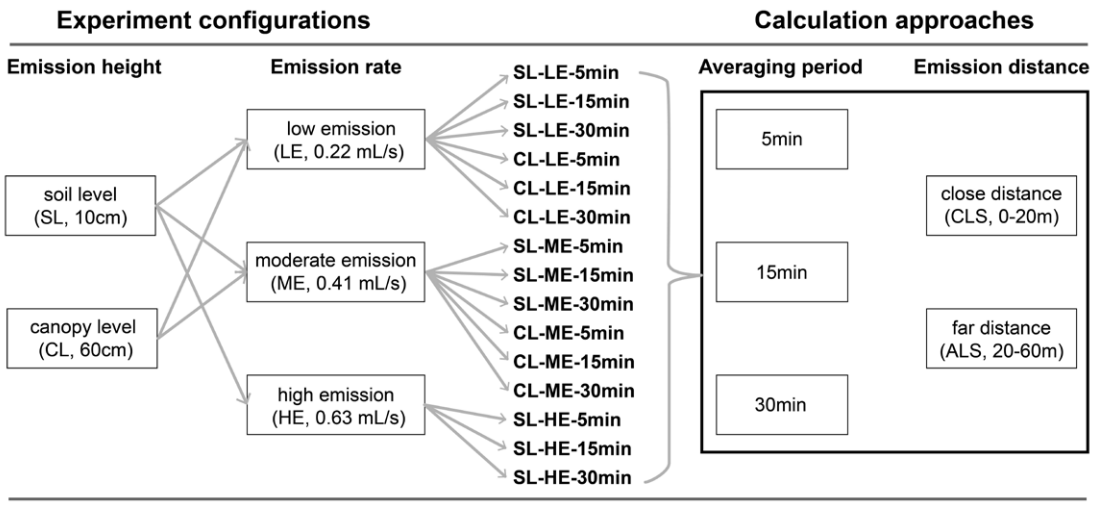

Figure S2. Schematic diagram of different experimental configurations and flux calculation approaches in this study.

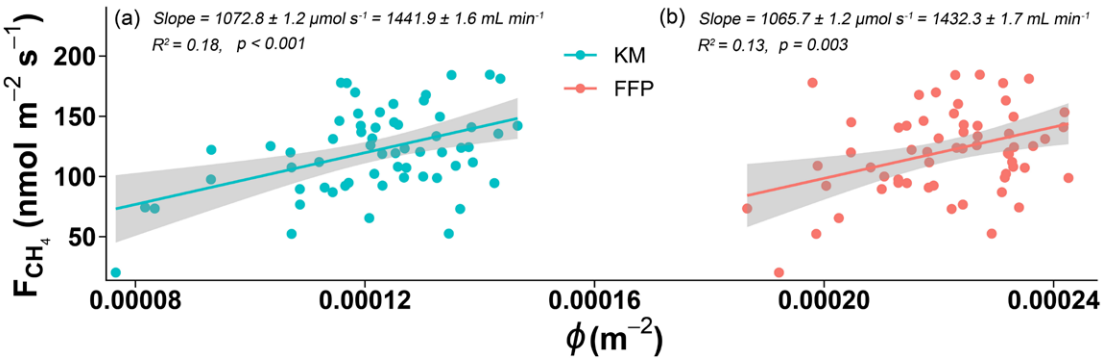

Figure S3. (a) The averaged CH_4 fluxes, F_{CH4} (nmol m^{-2} s^{-1}), against to line source contributions ϕ (m^{-2}) calculated by the KM; (b) FFP after parameters adjustment. The fitting results are demonstrated by the 5min average data under SL-ME configuration. The grey bands show 95% confidence intervals (CIs).

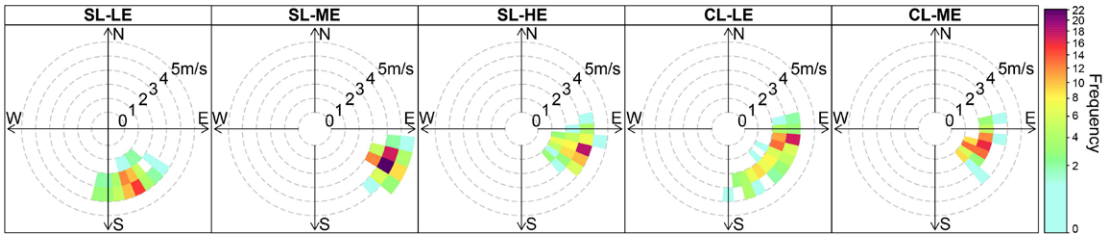

Figure S4. Bivariate wind-rose distribution of the frequency of wind direction and wind speed during the experiments with different configurations.