

Supplemental Material

Anomalies of O₃, CO, C₂H₂, H₂CO, and C₂H₆ detected with multiple ground-based FTIR and assessed with model simulation in 2020: COVID-19 lockdowns vs natural variability

Ivan Ortega^{1*}, Benjamin Gaubert¹, James W. Hannigan¹, Guy Brasseur¹, Helen M. Worden¹, Thomas Blumenstock², Hao Fu³, Frank Hase², Pascal Jeseck³, Nicholas Jones⁴, Cheng Liu⁵, Emmanuel Mahieu⁶, Isamu Morino⁷, Isao Murata⁸, Justus Notholt⁹, Mathias Palm⁹, Amelie Röhlings², Yao Té³, Kimberly Strong¹⁰, Youwen Sun¹¹, Shoma Yamanouchi¹⁰

¹Atmospheric Chemistry Observations & Modeling, National Center for Atmospheric Research, Boulder, Colorado, USA

²Karlsruhe Institute of Technology, Institute of Meteorology and Climate Research (IMK-ASF), Karlsruhe, Germany

³Laboratoire d'Etudes du Rayonnement et de la Matière en Astrophysique et Atmosphères, Sorbonne Université, CNRS, Observatoire de Paris, PSL Université, Paris, France

⁴School of Physics, University of Wollongong, Wollongong, Australia

⁵Department of Precision Machinery and Precision Instrumentation, University of Science and Technology of China, Hefei 230026, China

⁶Institute of Astrophysics and Geophysics, UR SPHERES, University of Liège, Liège, Belgium

⁷National Institute for Environmental Studies, Tsukuba, Japan

⁸Graduate School of Environmental Studies, Tohoku University, Sendai, Japan

⁹Institute of Environmental Physics, University of Bremen, Germany

¹⁰Department of Physics, University of Toronto, Toronto, ON, Canada

¹¹Key Laboratory of Environmental Optics and Technology, Anhui Institute of Optics and Fine Mechanics, HFIPS, Chinese Academy of Sciences, Hefei 230031, China

* Corresponding author: iortega@ucar.edu

March 2, 2022

List of Contents:

Figure S1. Monthly mean relative difference of CO obtained between the observations and predicted values for each month in 2020 for FTIR (red) and MOPITT (black). MOPITT anomalies are estimated using mean values within 100km radius around the FTIR site.

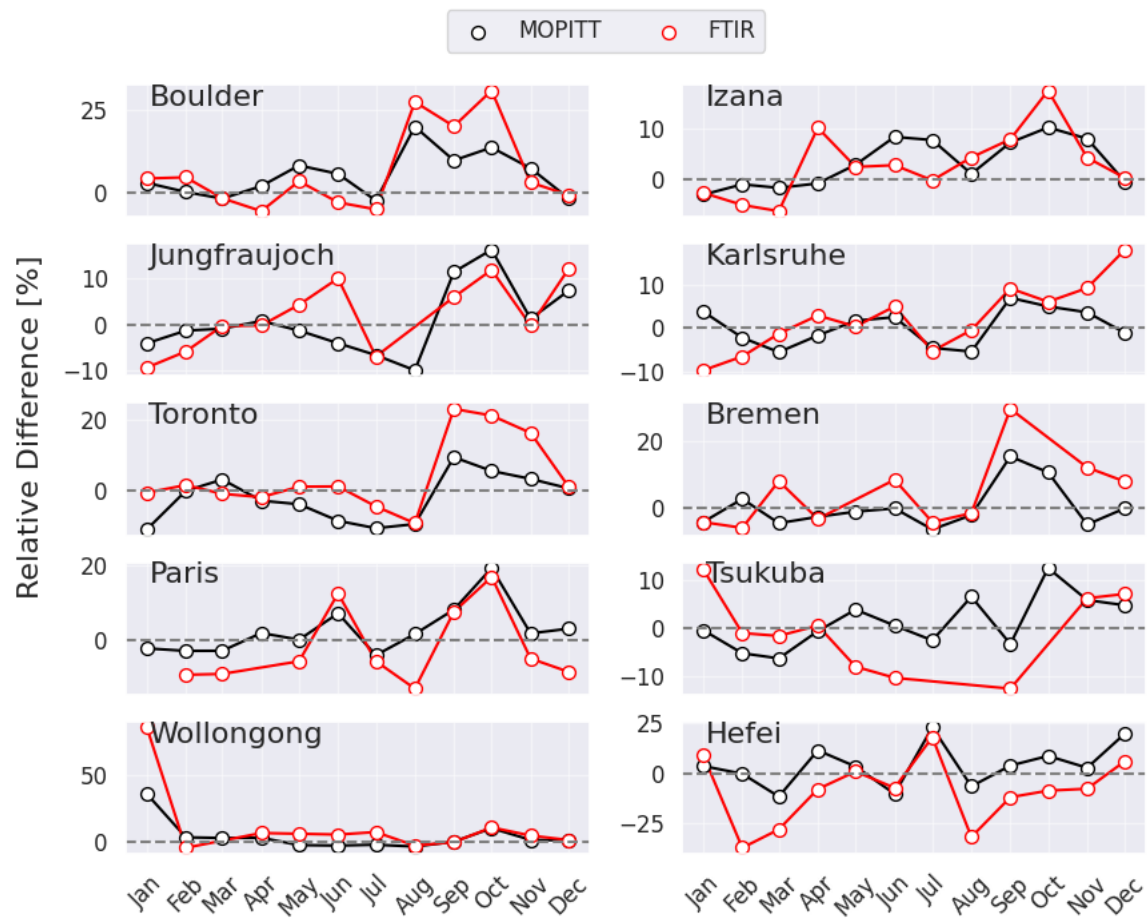


Figure S1. Monthly mean relative difference of CO obtained between the observations and predicted values for each month in 2020 for FTIR (red) and MOPITT (black). MOPITT anomalies are estimated using mean values within 100km radius around the FTIR site.