Comment on acp-2021-464
Anonymous Referee #2

The authors integrated emission inventories, GEOS-Chem simulations, in-situ, and GOSAT satellite retrievals to investigate CH\textsubscript{4} concentrations, sources, and sinks over China. Such an analysis is very important because CH\textsubscript{4} is the second most important GHG and China is the largest emitter of anthropogenic CH\textsubscript{4} in the world. However, we lack a comprehensive study to focus on China’s methane concentrations and budget at present. This study is a good first step, and I recommend this paper for publication in ACP. My main suggestion for the authors is that they can consider including the TCCON XCH4 data to evaluate their GEOS-Chem simulations as well. Besides, I suggest adding more figure legends to clarify that the global and regional CH\textsubscript{4} budgets (except those from GCE and GCC) and China’s CH\textsubscript{4} emissions data plotted in Figs. 3-5 are derived from previous literature, not the estimates of this study.