The manuscript “Nitrate radical generation via continuous generation of dinitrogen pentoxide in a laminar flow reactor coupled to an oxidation flow reactor” by Lambe et al. presents a NO_3 oxidation flow reactors system for studying the reaction of organic compound with NO_3 reactions and secondary organic aerosol from NO_3 chemistry. The authors give a very comprehensive characterization of the system by lab study as well as the model simulation. The paper is well written and the results are presented in a clear way. The analysis are sound and the authors proposed ideas will be of interest and helpful to the community. I recommend this paper for publication subjects to some minor comments.

General comments.

1. Section 2.2.1, the section cited some references about the wall loss of NO_3 and N_2O_5 in Teflon/Pyrex tube, and the NO_3 and N_2O_5 wall loss in LFR and OFR is extrapolating or interpolation based on the reported results, which weak the results as the wall loss of NO_3 and N_2O_5 in the system is an important source of uncertainty. The lab quantification of the wall loss in LFR and OFR in the future works can further improve the value of this study. Additionally, page 5, line 9-10, the fixed condition of OFR is ambiguous, please clear it, at least add the simulation results in SI. Page 5, line 11-13, the Extrapolating results is confuse, the reference said 0.04 and 0.009 s^{-1} corresponding to ID (4 and 7 cm), what is corresponding parameter of the $k_{wall,LFR}$ of 0.07 and 0.03 s^{-1} mentioned here?

Specific comments.

2. Page 2, line 29-34, this introduction of the LFR is confusing. The authors can use a schematic figure to show more details about the OFR-iN_2O_5 (rather than Figure 1 from references), which would increase the paper’s readability.

3. Page 4, line 8. Romanini et al. (1997) is not the right reference of the IBBCEAS principle, I suggest the author replace it by e.g., Fiedler et al., 2003.(Fiedler, S. E., Hese, A., and Ruth, A. A.: Incoherent broad-band cavity-enhanced absorption spectroscopy, Chem Phys Lett, 371, 284-294, 2003.)

4. In Eq .2 the k_{NO2} or k_{NO3} should revised to $k_{NO2+RO2}$ or $k_{NO3+RO2,}$ the similar change also applied in Eq. 3 and Eq. 4