Dear Dr Ham,

Thank you for your recommendations.

Regarding the code, only the newly developed code was provided because we had understood that it was possible to do it. But we fully understand the need for the reviewers to access the full code to check if it is reproducible. The full code is now available on Zenodo (doi: 10.5281/zenodo.7298580, https://zenodo.org/record/7298580) with instructions to compile and run it, and the input files required to run the simulations discussed in the paper. The full code has restricted access to Dr Astrid Kerweg (the editor of the paper), to the reviewers and to you.

Regarding the data archive, following your suggestion, the output files from the simulations are now available on Zenodo (doi:10.5281/zenodo.7299080, https://zenodo.org/record/7299080) instead of the mycore database which was previously used. For the Plume type of experiments, two set of files are produced by MOCAGE R1.18.1. The files in the Zenodo database need to be combined to get the concentrations which are analysed in the paper. In the previous set of files made available on mycore database, these files were already combined. The method for recombining the files in the Zenodo database is explained in the README.txt (available with the code) and also in the data archive information.

The last point is that in the course of preparing the code, a small error was found. This error does not affect most of the simulation results at all while for a few simulations there are only small changes which do not affect the analysis and conclusions of the paper. We enclose here the only figure where it is possible to see these changes. In Figure 2, it can be seen for N.Plume.0.1 that HBr is a bit lower in the new figure than in the original one and that there is a slight difference in BrO and BrO/SO_2 at the end of the simulation time. We will inform the reviewers in our answers and will update the figures in the next manuscript version to be produced. Note that the Zenodo (10.5281/zenodo.7299080, https://zenodo.org/record/7299080) archive of data files contains the new version of the data.
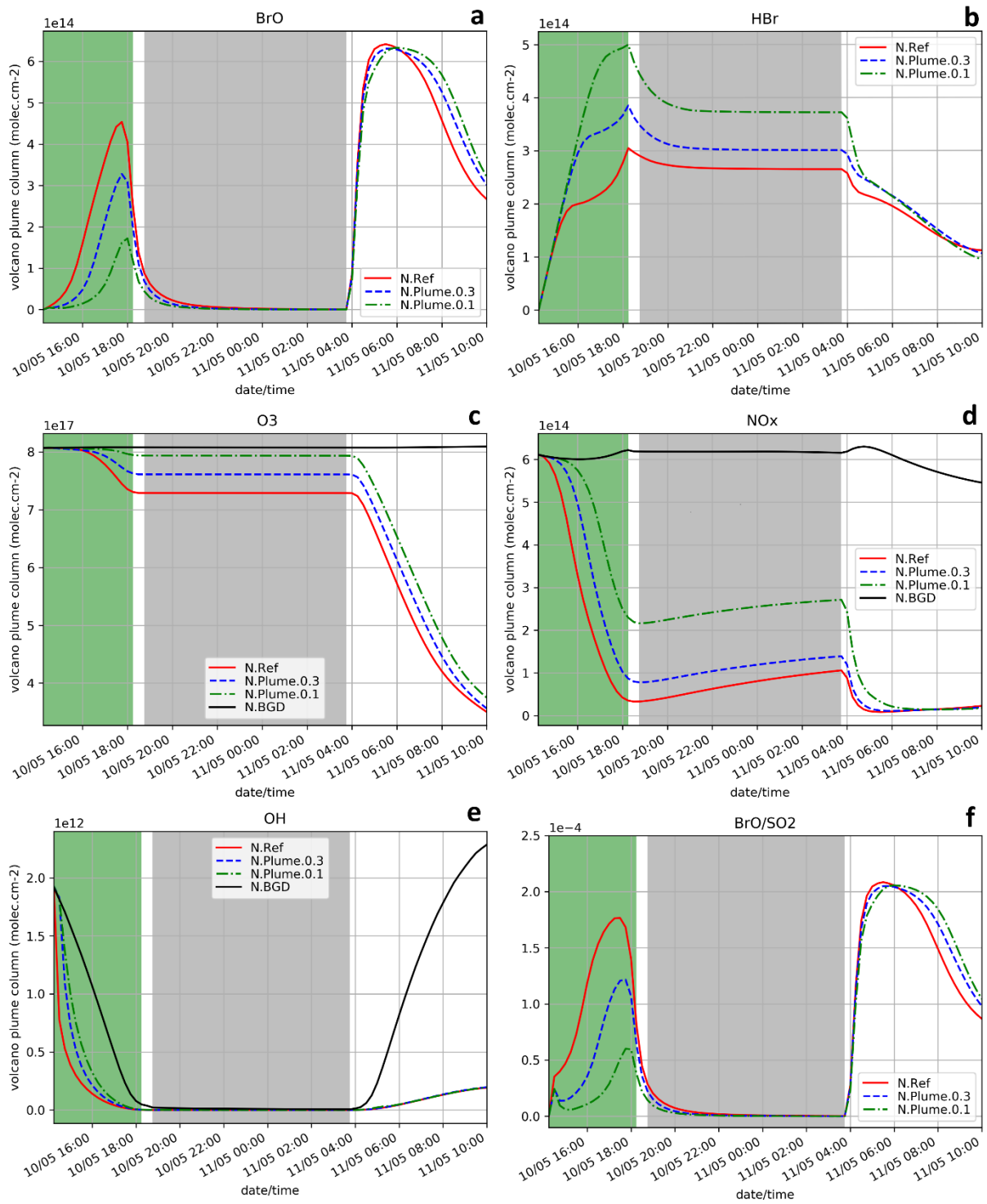
Best regards,

V. Marécal and co-authors

Figure 2 (new version)