

I am satisfied with the replies to my previous comments. The authors obviously worked hard to do extra experiments and analysis which makes the manuscript in a much better shape now. However, some minor mistakes still exist and are outlined below. The paper could be published after properly correcting the mistakes.

Table 2: In line "IDef", the "Smoldering fraction" is said to be "yes" which makes no sense. Do the authors mean it is the same as FWrp? If so, please explicitly denote it in the table like the line "IWrp".

Line 340: Probably because I did not make myself clear enough and therefore the authors made a mistake here. Drier environmental air once entrained into the plume will decrease its water vapor content and also the latent heat released during updraft. So, dry stratification favors weak pyro-convection and therefore low injection height. Then, it is better to say "where the atmospheric stratification **damps** the pyro-convection through entrainment" rather than "**has no control**". "**has no control**" would confuse readers to believe dry stratification could strengthen pyro-convection. Freitas et al. (2007) is recommended if the authors still find it hard to understand.

Line 427: "the dust can be lifted and transported downwind to **react** with the BB aerosols". I am not sure whether dust aerosols could have chemical reactions with BB aerosols. The authors might want to say the two kinds of aerosol react with NO_x, O₃ and SO₂ gases.

Line 429: "NO_x, and **SO42- aerosols** over western Taiwan in 2006 (Dong et al., 2018)". Please check Dong et al., 2018 again to make sure **SO42- aerosols** are discussed in this paper.

Freitas, S. R., Longo, K. M., Chatfield, R., Latham, D., Silva Dias, M., Andreae, M., et al. (2007). Including the sub-grid scale plume rise of vegetation fires in low resolution atmospheric transport models. *Atmospheric Chemistry and Physics*, 7(13), 3385-3398.