

Point-by-Point Response to Reviewers' Comments

Manuscript Ref: acp-2020-1020

Title: Source Apportionment of Fine Aerosol at an Urban Site of Beijing using a Chemical Mass Balance Model

Journal: Atmospheric Chemistry and Physics

Further comment from Reviewer

Page3 last paragraph Line 90-98: The authors should mention that the good performance of CMB and its comparability with other receptor modelling techniques was demonstrated in intercomparison exercises.

Response: As suggested by the reviewer, this is now added in the revised manuscript. The original paragraph “Chemical Mass balance (CMB) model has been used for source apportionment of PM worldwide, including in the US (Antony Chen et al., 2010), UK (Yin et al., 2015), and China (Chen et al., 2015b). The CMB model assumes that source profiles remain unchanged between the emitter and receptor (Sarnat et al., 2008; Viana et al., 2008). Xu et al. (2021) compared the source apportionment results of fine particles by multiple receptor modelling approaches, and found that CMB can provide the most complete and representative source apportionment of Beijing aerosols.” has been revised as

“Chemical Mass balance (CMB) model has been used for source apportionment of PM worldwide, including in the US (Antony Chen et al., 2010), UK (Yin et al., 2015), and China (Chen et al., 2015b). The CMB model assumes that source profiles remain unchanged between the emitter and receptor (Sarnat et al., 2008; Viana et al., 2008). The good performance of CMB and its comparability with other receptor modelling techniques was demonstrated in an intercomparison exercise conducted in Beijing (Xu et al., 2021).”

Please see **lines 90-96** in the revised manuscript.