2nd Review of "Top-down and bottom-up estimates of anthropogenic methyl bromide emissions from eastern China" (Haklim Choi et al. 2021).

Overall, the authors have done an excellent job re-working the paper and it is ready for publication with 1 minor exception.

Minor point 1: While I appreciate the authors taking into consideration the ratio method, they did not perform their analysis correctly. The revised analysis is done taking the average and standard deviation, and states that it is less robust, yet I specifically stated in my first review that it is the median, and not the mean, of the individual ratios that is more robust to outliers than the regression slopes. I've highlighted the points below:

Author response from Common Response 1:

Since it would be a meaningful alternative to the ISC regression method as a reviewer suggested, we tested the individual ratio method. Note, however, that the ratio approach would be less robust because the ratio values for even poorly-correlated, low enhancement data sets are equally weighted with those taken highly- correlated ΔCH3Br vs. ΔCFC-11 sets. Fig. R2 shows the ***annual averages and 1-s standard deviations of the enhancement ratios of individual CH3Br and CFC-11 datasets*** *in comparison with the ISC regression slopes for all data and outlier-filtered data.*

Initial review:

Regional scale tracer-tracer ratios are typically represented by broad distributions and are decidedly non-gaussian. An alternative method is to simply ratio each enhancement and take the ***median value, and the uncertainty of the median, which is more robust to outliers than either the arithmetic mean or regression slopes*** *(see Miller et al. 2012).*

The authors point out in their response to reviewer 2:

In ratio approach, the same weight is given to each observation data to acquire the average (or median) ratio value.

While it is true that both the average and the median give equal weight to each observation, it is not relevant because the mean and median are calculated in two different ways. To illustrate this, consider a made up 10-point data set of ratios:

[4,4,5,5,6,4,5,3,6,100]

This set has a mean of 14.2, but a median of 5.

Given that you are looking for a ratio that is representative of the bulk of your data, this shows how the median, while still giving equal weight to all values, is more representative of the bulk of the ratio data, and therefore more robust to outliers, than the mean (and regression slopes).

Therefore, I am not surprised by the authors revised analysis to see that the mean value of the ratios is not different than the regression slope method. However, the median of the ratios could be, and should be included.

The median annual ratio (not the mean) is easily calculated (since you have already done the bulk of the work getting the mean values) and then added to Table S1. Assuming this does not change the results in a meaningful way, after this is added the paper is ready for publication from my perspective. If there is a significant change, the results should be updated.