

## ***Interactive comment on “Evaluating China’s fossil-fuel CO<sub>2</sub> emissions from a comprehensive dataset of nine inventories” by Pengfei Han et al.***

### **Anonymous Referee #2**

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This is a potentially very interesting paper but the current version is poorly organized and inadequately explained. It needs serious reorganization to tell a direct and clear story. Most of the graphics are quite adequate but need a bit more explanation. Figures 4a, 4b, etc need a lot more explanation.

The problems start early. This is a comparison of 9 datasets but sentence number 3 seems to accept values from one dataset (Le Quere et al.) – but this dataset does not appear to be part of the comparison. Table 1 lists the properties of the datasets to be compared, but there are only 7 in the table. Sentence number 2 of paragraph 2 jumps abruptly and without explanation from Chinese emissions estimates to global gridded emissions datasets. Line 58 introduces the CDIAC dataset, which also turns out to be not part of the comparison. In line 100 datasets from EIA, IEA, and BP are introduced,

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but also apparently not used in the comparison. There is no consistent story line on what is being compared and why, on the fact that comparison will be made at the national, provincial, and grid bases. Table 1, text line 110, and Figure 2 all seem to say that CHRED exists only for 2007, but it appears elsewhere, for example Figure 4, with data for 2012?

Interesting but ad hoc statements appear throughout the text. Line 102 says that one of the purposes of the study was to identify “spatiotemporal differences” but there is no further mention of temporal differences. CARMA enters the discussion in line 109, without definition or citation. EF enters the discussion in line 88 but if it is defined it is lost in a sea of acronyms. Biomass burning appears in line 118 but there is no mention, until the closing discussion, on how it is used. I did not find enough discussion of Figure 1 to make it useful. IF FCPSC was defined I missed it.

Line 139 says “both are 21%”. But does not say % of what. This problem appears elsewhere in the text as well. In line 299, “same” as what? Text around lines 145 to 155 is so poorly organized that it is hard to follow. Page 10 is rambling and disconnected.

On line 225 do I understand that total emissions from large point sources are approximately the same even though one data set has 2320 points and the other 945? How does this fit in with the 720, 1706, and 2320 in line 303?

I could list many additional problems of organization and flow of the text.

There is much here that appears to be interesting. The paper needs a major re-organization and significant increase in explanations of what was done and why and what we learn from it.

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