

Interactive comment on “Modeling the impact of chlorine emissions from coal combustion and prescribed waste incineration on tropospheric ozone formation in China” by Yiming Liu et al.

Anonymous Referee #1

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This manuscript presents an updated inventory of HCl and Cl₂ emissions from various sources in China. Sources of inorganic chlorine are - in general - poorly constrained, so this study is highly relevant and provides new information on both the sources and the impacts of chlorine as atmospheric oxidant. I suggest it is published in ACP, after the authors have addressed a few questions and clarifications.

On page 5, line 4: what is the rationale behind this assumption? Also, is all coal used in China from domestic sources or is some of it imported? In the latter case, is the chlorine content different?

In Section 2.2, emissions from prescribed waste incineration are described. What

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about the open waste incineration?

In Section 2.3, HCl is emitted primarily from the industrial sector. Is this due mostly to coal burning and if so for what purpose? I assume electricity generation is not included in this, but in the power plant sector.

page 12, line 26: do you mean "the highest chlorine emissions"? And do you mean Cl atoms or HCl and Cl₂?

MINOR CORRECTIONS:

reactions 1 and 2: the 'H' should be lowercase

page 9, line 21: "literature"

page 10, line 22: what is "fine Cl"?

In Table 1, maybe highlight the "Mainland China" line so that it is clear it is the sum of the previous lines?

In Figure 2, is "waste incineration" only the prescribed or the sum of prescribed and open?

In the Supplement, Figure S2 is split between two pages.

Interactive comment on Atmos. Chem. Phys. Discuss., <https://doi.org/10.5194/acp-2017-844>, 2017.

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