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Interactive comment on “Impacts of rice varieties and management on yield-scaled greenhouse gas emissions from rice fields in China: a meta-analysis” by H. Zheng et al.

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We conducted a cross-site synthesis that considers environmental influences as a random variation across sites. The rice fields are mostly located in southern China where rice yields are comparable despite a small variation in environmental influences. Rice varieties and fertilization are two major factors determining rice yields, and thus are used in this study to evaluate CH₄ and N₂O emissions. For those fertilization effects, we only used the data from side-by-side experiments (Page 7, Line 25). To evaluate the effect of rice varieties on GHG emissions, we conducted meta-analysis that cross all sites. In terms of global warming potential (GWP), we agree CO₂ is impor-

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tant as rice fields could be CO₂ sinks and thus offset CH₄ and N₂O emissions. But in this manuscript we have specifically mentioned that CO₂ emissions and uptake are not included in this study. We did not mean yield-scaled CH₄ and N₂O production is the single factor to select rice varieties. We meant without sacrificing crop yields, we should select those varieties that produce the least CH₄ and N₂O production as the environmental impact of agriculture.

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