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 important 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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