

Interactive comment on “Seasonal variations in metallic mercury (Hg⁰) vapor exchange over biannual wheat – corn rotation cropland in the North China Plain” by J. Sommar et al.

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We appreciate that Referee #1 acknowledges our methodology to be fundamentally sound. However, in our opinion, by being somewhat vague and contradictory (Few additions are required vs. several issues need to be addressed and improved...), the referee renders a concise revision of the manuscript more difficult. For the only tangible comment concerning a discussion of alternative flux measurement methods insisted by the reviewer and hinted by the given references to potentially involve flow-through chamber with non-steady state operating conditions (e.g., a static type not commonly used among Hg researchers), we feel that such a discussion dilutes the

C9992

scientific points and appears out of the scope of our paper. This paper deals with agroecosystem Hg⁰ fluxes over cereal croplands, which can not be resolved by merely soil-wetted chamber measurement but also require input of above-canopy flux. Indeed, air-soil measurements make up a minor part of this study. The rationale of using a novel type of dynamic flux chambers (DFCs) in concert with MM-measurements has been introduced and substantiated in our previous papers (Lin et al. EST, 2012 and Zhu et al. ACP, 2015a, b) referred to in the manuscript. As a compromise to the comments of referee #1, we refer to Rinklebe et al. 2010 concerning their findings of controlling factors of Hg⁰ efflux from soil (Line 66). Further references to Rinklebe et al. etc. in connection with observation of temporal (diel, seasonal) flux patterns appears redundant since these papers deal with contaminated floodplains, instead of agricultural soils that this study focuses on.

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C9993