

## ***Interactive comment on “Deciphering the Chemical Forms of Gaseous Oxidized Mercury in Florida, USA” by Jiaoyan Huang et al.***

### **Anonymous Referee #1**

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The manuscript presents field observations of ambient concentrations of speciated mercury and other air pollutants at a coastal site in Florida. GOM were monitored with Tekran and membranes. GOM dry deposition fluxes were calculated using Tekran concentrations (with a correction factor) and dry deposition velocities, and monitored using surrogate surfaces. Some GOM forms were observed on some membranes, and those possible forms were used to estimate dry deposition fluxes with various correction factors. Other analyses include back trajectory. The topic is relevant to ACP. My comments/suggestions are listed below.

#### 1) Major concern

My major concern is the originality and scientific contributions of this manuscript, considering the large number of publications (as listed in the reference section of the

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manuscript) by the two primary authors (i.e. Huang and Gustin) in the past few years on the topic of the chemical forms of GOM. The authors may want to clarify whether this manuscript presents results at additional sites, during a different time period, with different methodologies, or of different findings /concessions.

#### 2) Editorial comments and suggestions

The use of English language is overall satisfactory. However, there is room for improvement.

a) L78-89, this section could be replaced by a brief summary of the methodology since a detailed description is presented in the Methods section.

b) There are a few awkward phrases and sentences, e.g. “~24% of the air comes from the marine boundary layer during the day and 60% during the night”; “if we assume the model is right”.

c) In the references, some papers are listed twice. Also, not sure if a manuscript under preparation (L440) could be included in ACP manuscripts.

d) Table 2, not sure if a manuscript under review could be included in ACP manuscripts.

e) Figure 5 caption was incorrect to me. The word “left” meant “top” then “bottom”, suggest labelling subplots as a) and b).

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