

## Response to the Comments of the Reviewers

### **Evaluating Vehicle Emission Control Policies using on-Road Mobile Measurements and Continuous Wavelet Transform: a Case Study during the Asia-Pacific Economic Cooperation Forum, China 2014**

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We thank the reviewers for their helpful comments. We have revised the manuscript according to their suggestions and respond to their concerns below.

#### **Reviewer #1:**

**Comments:** The presented study could be more interesting from the methodological point of view. The authors stated in the abstract that “the ‘instantaneous concentration’ decomposed by the CWT method represents on-road emissions better than other methods reported in the literature”. This conclusion is not supported by the presented analysis. The authors have made no attempt to estimate the contrast in concentration between major roads and (sub)urban background based on the measurements from fixed monitoring sites. I’m sure that many measurement stations (urban background and traffic) are in operation in Beijing and it might be not so difficult to analyze the air pollution levels by more traditional method. This the comparison of the two different approaches might really raise the scientific value of this paper.

Page 14, line 284: is a decrease by -46% just an increase by 46%? To avoid any misunderstanding, it might be better to name a “negative decrease” just “increase”.

This is valid for all such examples in text.

**Response to Reviewer comment:** In this paper we aim at evaluate the effectiveness of vehicle control policies. Use the average concentration of vehicle emission are the most exact way, but it’s hard to get the real vehicle emission concentration. As we mentioned in line 112, the difference between mobile measure and urban background station measure can’t represent vehicle emission concentration. Although, we also calculate the difference of our mobile measure and background station measure in the campus of Peking University. The results show that vehicle emission NO<sub>x</sub> and CO decreased 25.9% and 18.3% in APEC period relative to the period before APEC, and decreased 27.4% and 45.8% in APEC period relative to the period after APEC. The huge difference of CO decreased percent in APEC period relative to the period before APEC and the

period after APEC may highly influence by the different meteorological conditions.

We agree to change the express of “negative decrease” into “increase”.