

## ***Interactive comment on “Ambient measurement of shipping emissions in Shanghai port areas” by Xinning Wang et al.***

### **Anonymous Referee #1**

Received and published: 11 September 2018

See the attached comments.

Please also note the supplement to this comment:

<https://www.atmos-chem-phys-discuss.net/acp-2018-737/acp-2018-737-RC2-supplement.pdf>

Interactive comment on Atmos. Chem. Phys. Discuss., <https://doi.org/10.5194/acp-2018-737>, 2018.

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Discussion paper



Review on the manuscript "Ambient measurement of shipping emissions in Shanghai port areas" (ACP-2018-737). Authors: Wang et al.

#### General comments

This study conducted field measurements from June to September in 2016 at Shanghai port in order to understand the impact of ship emissions on the air quality in portside. Trace gases, PM<sub>2.5</sub> and vanadium particle number concentrations were continuously monitored at the site. Ship plumes were clearly captured by the instruments. SO<sub>2</sub> and vanadium particle number concentrations correlated well with ship plumes. Four types of ship plumes were identified based on the mass spectra of Single Particle AMS. The contributions of ship emissions to different air pollutants in the atmosphere and in the air masses from port directions were quantified. Given that Shanghai port is the largest port in the world, this study will add values to existing literature of ship emission studies. However, the manuscript is not well organized/written and has room to be improved. In addition, there are quite a lot of grammar errors and technical mistakes, which sometimes make the reviewer confused. Furthermore, some discussions and conclusions are lack of evidence. As such, this manuscript can be considered for publication after the following specific comments are well addressed.

#### Specific comments

##### Abstract:

Firstly, English needs editing by a native English speaking professional or company. For example, line 16: ... that shipping **emissions** is a major...".

Secondly, there are also some technical mistakes. One example, lines 14-15: Gaseous (NO, NO<sub>2</sub>, SO<sub>2</sub>, O<sub>3</sub>) and particulate concentrations (PM<sub>2.5</sub>)... It should be "**The concentrations** of gaseous **pollutants** (NO, ... ) and **fine particulate matters** (PM<sub>2.5</sub>)...". Also, both shipping emission and ship emission are used throughout the manuscript which should be consistent. Another problem at lines 18-20, the subject is "Single particle mass spectra of **fresh shipping emission**" but the last words became "...and nitrate peaks in **aged particles**". This is really confusing the reviewer.

Thirdly, the abstract should provide specific and detailed findings rather than common senses. The only specific finding described in the abstract is probably the last sentence. The others are all about common knowledge which is also applied to any other ports. What is the uniqueness of the study port?

##### Introduction:

As there are too many grammar errors, I have made some comments and revisions on the manuscript. I will submit my comments with the manuscript.

##### Experimental:

1) It is not clear whether the sampling site is downwind location of the port or not, or whether the ship plumes could really arrive at the sampling site or not. The authors should provide more

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