

## Review of Fu et al. for Atmospheric Chemistry and Physics

### *General Comments*

The responses to reviewers are thorough and helpful. The changes made to the manuscript, figures, and supplementary information are substantive and sufficient. The entire paper needs to be edited by a native English speaker to be grammatically sound enough for publication. Thus, I would support publication in Atmospheric Chemistry and Physics after technical corrections.

#### **1. Evaluation of model coupling**

The description of cases is much improved and sufficient. The additional analysis of aerosol measurements supports the use of these urban measurements to evaluate the impact of changes to the ammonia fertilizer emissions and bidirectional treatment of ammonia.

#### **2. Comparison with other emissions estimates**

The authors could still improve the comparison with other estimates of fertilizer emissions by acknowledging that the flux to air of deposited ammonia in the bidirectional method changes how emissions are counted. If the authors have not considered reemission of ammonia in the 3.0 Tg total, it would be important to note how the calculation has been done.

#### **3. Uncertainty analysis**

The authors have strengthened the uncertainty analysis section by describing many sources of uncertainty in the modeling process. Nevertheless, no quantitative work is done to support +/- 50% uncertainty (p.17, l.2). This number needs to be excised from the paper to avoid being misleading for future work.

### *Specific Comments*

#### **A. Abstract**

<i>Lines</i>	<i>Comment</i>
--------------	----------------

8	“coupling” to “which couples”
---	-------------------------------

9	“Multi-Scale” to “Multi-scale”
---	--------------------------------

11	“emission” to “emissions”
----	---------------------------

13	“rate” to “rates”
----	-------------------

14	“method for different crop” to “methods for different crops”
----	--

15	“inputed” to “input”
----	----------------------

**B. Text**

**Page | Lines**

**Comment**

throughout

“researches” to “research”

throughout

“It’s” to “It is”

The text needs to be thoroughly edited by a native English speaker.