

# ***Interactive comment on “Impacts of climate change and emissions on atmospheric oxidized nitrogen deposition over East Asia” by Junxi Zhang et al.***

## **Anonymous Referee #1**

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This manuscript explores projected simulations of atmospheric oxidized nitrogen deposition to the region of East Asia and adjacent waters of the northwest Pacific Ocean, using the ACCMIP model ensemble, under various scenarios of climate and emissions changes. The study is well constructed and the presentation of the manuscript is clear, logical and thorough. The conclusions of the work (i.e. evolving influences of emission change and changes in precipitation on northwest Pacific marginal seas primary productivity) are interesting and concisely communicated, together with an indication of the limitations of the study. I recommend publication in Atmospheric Chemistry and Physics, with only minor typographic and presentational amendments.

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Minor corrections Line 147: change to “some models” Line 296: insert “deposition” after “wet NO<sub>y</sub>” ? Line 307: “change are”, not “change is”. Line 422: change to “who reported that nitrogen” ? Line 434: insert “from NO<sub>y</sub>” after “PP” ? Lines 424 – 447: It may be worth noting in this paragraph that the projected changes in PP from NO<sub>y</sub> discussed here take no account of potential limitations on PP due to scarcity of other nutrient species. Figures 1 – 6 and 9: These are all good figures, containing a lot of interesting information. However, because they contain a lot of panels, it can be difficult to read the rather small lettering identifying each individual scenario. For the final version of the manuscript I would suggest having a single row of column headings (Spring, Summer, etc.) at the top of each figure and moving the row identifications (e.g. TRMM, GPCP, ACCMIP for Fig. 1) to a single column of labels beside each row.

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