

**Review of acp-2017-567: *Data assimilation of GNSS Zenith Total Delays from a Nordic processing centre*, by Magnus Lindskog, Martin Ridal, Sigurdur Thorsteinsson, and Tong Ning**

**General Comments**

This paper is reasonably well written and I find its topic quite interesting in the context of limited-area mesoscale model Data Assimilation.

Anyway, I feel there are a few issues that might deserve a closer look, as discussed in the detailed comments below.

**Specific Comments**

Introduction

- A so extended explanation of the model used could not be so necessary here due to it is done later in Section 3.
- When is says "and GNSS ZTD from 28 receiver stations are assimilated operationally in MetCoOp" could be explained a little more.

Section2:

- The writting (wording) of this section should be revised.

Section4:

- More clarification of the different experiments should be made, for example when talking about A , B or D experiments comment that they are all using 100km thinning, when the experiments are from A, C or D they are using a constant offset, etc. Maybe a table with all the experiments and properties could help.
- Why do you specify the experiment name just on A1, A2, and A3 cases ?

Section5:

- The Case study Section was clearly explained but may be not enough to show the improvement of using one thinning distance or other. Supporting those graphics with the use of SAL verification method for example could result in a more complete description of the chosen case study.

**Technical Corrections**

Introduction

- There are several repeated "they"

-Statistics instead of statistcs

#### Section2:

-NGAA name should be mentioned at the beginning.

-ZTD instead ZTDs

-NRT: explanation is needed when it is used for the first time

2.2. The title could be changed to NGA1 product/ dataset, not just NGA1

2.3 The same

2.4 Please review the wording. Receiver instead of reciever

#### Section3:

-assimilation instead of assi milation

-data assimilation instead of data assimilations

-...control variable vorticity, unbalanced divergence, ... review that sentence

-alleviate instead of elevate

-Last paragraph: review the writing

#### Section5:

5.2- Review the first sentence writing

5.3.-

-H+12 and H+24 instead of +12 and +24

-Fig 6: H+12 instead of +12

-“For forecasted variables other than humidity...”, review this sentence

-“.. in the form of NGA1...”, it is not a ‘form’ but a product or dataset.

-Review the writing of the last part of the section

-Fig 8, 9 and 10: H+12 and H+24 instead of +12 and +24

5.4- Figure 12: 2016 instead 2026