

Interactive comment on “Influence of station density and multi-constellation GNSS observations on troposphere tomography” by Qingzhi Zhao et al.

Anonymous Referee #2

Received and published: 22 November 2018

General comments This paper examines some aspects of tropospheric tomography using GNSS signals via designed experiments. The main purpose is to investigate the impact of station density and multi-constellation systems involved in the process of estimating a better representation of water vapour in space.

Specific comments Did not quite understand the selection of the various schemes. For examples why 10 vs 14 stations? What is the basis for this choice? Do the differences between schemes in terms of RMSE as presented in Table 8 justify the main claim of the paper?

Technical corrections 29 this was not as high as expected. 37 voxels in different direc-

C1

tions 38 reconstructed under the assumption that the unknown 67 GNSS data, which is the focus 68 determine the optimal division of voxels in the horizontal direction 70 influence of the number of stations in a network 72 the quality and reliability of tomographic atmospheric water vapour obtained from different 80 single/multi-constellation GNSS observations on troposphere tomography are analysed in detail 90-94 Wrong usage of former and latter must rephrase 157 In the procedure of horizontal voxel division, an approach is developed which enables the determination 177 Further to the conclusion above it can also be concluded 178 for the entire region using two/three/four-GNSS observations both increase with the 195 following analysis focuses on: (1) investigating of two schemes in 204 difference of voxels crossed by rays between Schemes 2 and 1 is not as expected for the case of 219 It should be noted that the number of Galileo satellite is lower 221 SWDs 222 Galileo satellites 223 the highest 225 only by about 3% more than 226 of voxels for the three Schemes 288 lower than that 292 Hence it was 323 an iterative procedure 379 The upcoming full operability of the multi-constellation GNSS, is expected 381 results is not as expected

Interactive comment on Ann. Geophys. Discuss., <https://doi.org/10.5194/angeo-2018-106>, 2018.

C2