

# Tomographic fusion strategies for the reconstruction of small-scale structures in the lower atmosphere

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## Abstract

While geodetic GNSS networks are nowadays the backbone for troposphere tomography studies, further local densifications are necessary to achieve very fine spatial and temporal resolution. InSAR interferograms, GNSS radio occultation, or microwave radiometer profiles can provide the required complementary information for stabilizing the tomography system. However, the combination of sensing techniques is a challenging task and requires a profound understanding of the underlying observation principles. Furthermore, tomographic fusion requires a strategy for observation selection and a weighting scheme for the reliable handling of redundant information. Thus, over the last two decades of tomographic research, a series of methods have been established for the optimal combination of space geodetic and related sensing techniques – sensitive to the water vapor distribution in the lower atmosphere. Within the IAG working group 4.3.6, a review of integrated fusion strategies has been carried out. In this presentation, we will provide an overview of the significant findings – categorized according to the type of sensor combination and integration level.