

The authors have addressed several comments of the reviewers in the actual version of the document. I feel a little bit uncomfortable with the issue that MERIS data are applied for validation as they only provide the water vapour above the clouds. It remains the issue mentioned by reviewer #2 that a study applying more cases could help to shed more light on some issues of the method and its applicability. On the other hand, authors explain in the comments why so few cases are available (MERIS, InSAR and GNSS together and MERIS nearly cloud free) - this on one hand justifies the number of cases on the other hand asks for more elaboration on the method concerning applicability but also why the computation time is important as I a) see no values for computation time and b) are not sure if this technique will ever become operational.

major remarks:

page 3, line 7: "Various research suggested the assimilation of atmospheric measurements into these models to improve the quality of the data." As data assimilation is for a long time a standard operation in atmospheric modelling, this statement lacks information and does not help to introduce the research question (at least one citation is missing here). On the contrary, the statement asks for a comparison of the data fusion approach to a data assimilation approach, appealing by a finally physically consistent picture.

page 3, line 10: "We want to comprehend if the model simulations of water vapor, in their current quality, together with other measurement-based estimates can provide complete knowledge about the atmospheric water vapour." The formulation is in my opinion misleading as the main data source in your case is not the mesoscale model but the remote sensing data. You improve these data by adding a mesoscale model. If you state it like this, you should first go for an improvement of the model simulation. By the way, if you intend to provide "complete knowledge about the atmospheric water vapour" you have to determine its variability in 3d and cannot compare it to 1 MERIS scene which seems to be nearly cloud free. So better rephrase your research question.

page 4 line 22: The Wang and Seaman (1997) citation is too old / inappropriate, as a) they apply precipitation, sea level pressure, wind, and temperature predictions for model evaluation and b) there has been a great development of mesoscale models in the recent years approaching the convective permitting scale (Prein et al., 2015). If you cite Wang and Seaman (1997), you should also discuss the influence of other parametrizations than that one for convection, also responsible for water vapour, like microphysics, planetary boundary layer and land surface. A simple search in Web of Science or Scholar Google shows some more appropriate papers dealing explicitly with water vapour in mesoscale models (e.g. Wilgan et al. (2015) or citations in it).

minor comments:

page 4 line 22 "The the" -> "The"

page 11 line 2 "signalis" -> "signal is"

Prein, A. F., et al. (2015), A review on regional convection-permitting climate modeling: Demonstrations, prospects, and challenges, *Rev. Geophys.*, 53, doi:10.1002/2014RG000475.

Wilgan, K, Rohm, W and Bosy, J (2015) Multi-observation meteorological and GNSS data comparison with Numerical Weather Prediction model. *Atmospheric Research*, 156, 29-42, DOI: 10.1016/j.atmosres.2014.12.011