Regarding Dr. Stefan Kneifel additional discussion, our comments on the deployment of MWR in complex terrain have been moderated.

In the introduction we have changed the sentence :

To that end, this is the first time that a MWR has been deployed in such a narrow valley (less than 5 km between the closest mountain slope and the instrument) with measurements going down to 5° elevation angle during which 1DVAR retrievals are performed from a convective scale model.

Into :

To that end, a MWR has been deployed in a narrow Alpine valley (less than 5 km between the closest mountain slope and the instrument) with measurements going down to 5° elevation angle. This is the first time 1DVAR retrievals are performed from a convective scale model in complex terrain during which large forecast errors are observed.

In the conclusion we have changed :

In such complex terrain we could have expected the measurements to be affected by surrounding mountains and one **major** result of this study is to show that MWR observations are not affected in such a narrow valley even going down to 5° elevation angles

into :

In such complex terrain we could have expected the measurements to be affected by surrounding mountains and one **interesting** result of this study is to show that MWR observations are not affected in such a narrow valley even going down to 5° elevation angles

The discussion on the literature of complex terrain deployment has been changed from :

Previous papers deploying MWR in complex terrain are not abundant, only three to our knowledge : Kneifel et al. (2010), Cimini et al. (2011) and Massaro et al. (2015). The study of Kneifel et al. (2010) does not investigate the temperature profile retrievals and the radiometer is deployed at the mountain top above the crest. In Cimini et al. (2011), the terrain is more complex but the 1DVAR is investigated with a global NWP model at a 10 km horizontal resolution and using only one elevation angle in addition to the zenith. The radiometer measurements do not go lower than 15° elevation angle which significantly limits the possible perturbance from surrounding mountains. Massaro et al. (2015) deploys the instrument in a valley with a free viewing angle up to 28 km whereas the Passy valley is only 5 to 6 km long in the Passy direction and only focussed on regressions without any comparison with the 1DVAR algorithm. Temperature gradients were also smaller compared to those observed during Passy. This is also the first time, to our knowledge, that the instrument was operated scanning in two different directions.

Into :

Previous papers deploying MWR in complex terrain are not abundant, **among them we can cite** : Kneifel et al. (2009), Kneifel et al. (2010), Cimini et al. (2011), Xie et al. (2012) and Massaro et al. (2015). **In Kneifel et al. (2009) the terrain is not as complex as in Passy with a maximum elevation of only 350 m and only integrated water vapor retrievals are investigated. Both studies of Kneifel et al. (2009) and Xie et al. (2012) do not investigate temperature profile retrievals neither and the radiometer is deployed at 2650 meters above sea level which differs from the deployment at the bottom of the 2000 m deep Passy valley.** In Cimini et al. (2011), the terrain is more complex but the 1DVAR is investigated with a global NWP model at a 10 km horizontal resolution and using only one elevation angle in addition to the zenith. The radiometer measurements do not go lower than 15° elevation angle which significantly limits the possible perturbation from surrounding mountains. Massaro et al. (2015) deploys the instrument in a valley with a free viewing angle up to 28 km and only focussed on regressions. **Regarding the Passy valley, the free line of sight is limited to 5 km in the Passy direction and 1DVAR retrievals from a convective scale model are performed. Temperature gradients were also larger compared to those observed in Massaro et al. (2015).**