The authors are thankful to Anonymous Referee #1 for the comments provided. In the following, we answer the comments point by point. The original comments from Referee #1 are reported in bold font and our answers in normal font.

1. P4577, line 18-22. I think the model level above ground and the surface conditions are mainly resposible for the variation of the evaporation rate. Since the surface temperature is prescribed, the surface satuated mixing ratio follows the surface temperature. As a result, the water vapor mixing ratio at lowest model level dominated the surface evaporation rate. When the atmosphere is wet in the first a few days (Fig.4), the surface evaporation rate is low (Fig.7), when the atmosphere is drier and dried the surface evaporation rate goes up. That's why when water vapor is exponentially decreased, the surface evaporation rate has an exponential increase.

The interpretation suggested by Referee #1 is correct. The water vapour mixing ratio at the lowest model level dominates the surface evaporation rate, as can be seen in Fig. 11, where we plotted the average surface evaporation rate e as a function of the average water vapour mixing ratio at the lowest model level (2 m above ground) $q2$. A higher evaporation rate corresponds to low $q2$ amounts and vice versa.

We will modify the relative paragraph in Sect. 4.4 taking into account these considerations.

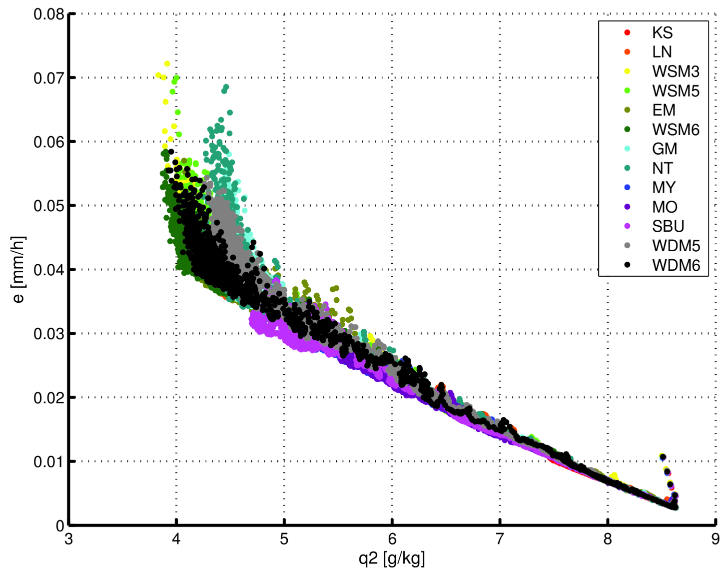

Figure 11: Water vapour mixing ratio at the lowest model level (2 m above ground) vs surface evaporation rate.

2. P4568. Is 500m too coarse for the lowest model level?

The lowest model level is at the surface. 500 m is the vertical resolution (in the lower part of the domain) which is the distance between model levels. The spacing between model levels was computed automatically by WRF based on the number of model levels and on the maximum model altitude defined in the user-editable *namelist.input* file. We decided to leave these two parameters unchanged (41 vertical levels and 30 km maximum height) with respect to the original test case *em_hill2d_x*, as most of the other studies cited in Section 1 used the same number of vertical levels or even less.

3. It will be interesting to see the profiles of the Temperature (T) and water vapor (Qv) tendencies from different parts, e.g., dynamical advection and mixing, microphysics, radiation, and PBL vertical mixing. How different microphysics schemes influence other model parts to balance T and Qv in the atmosphere.

At the beginning of the model time-step, the radiation, surface and PBL schemes produce tendencies of atmospheric state variables (including potential temperature and water vapour), while the microphysics, being an adjustment process, does not provide tendencies but updates the atmospheric state at the end of the model time-step.

This information will be added in Sect. 2 of the revised manuscript.

4. Are RRTMG radiation schemes more suitable for the simulations in this case?

RRTM retains the highest accuracy relative to line-by-line results for single column calculations, while RRTMG provides improved efficiency with minimal loss of accuracy for GCM applications (Iacono et al., 2008). Since our simulation is a 2D idealized simulation and not a GCM simulation, we found the RRTM longwave radiation scheme suitable for our purpose.
For shortwave radiation, although the Dudhia scheme is one of the simplest schemes available, it seemed good enough for us since it includes clear-air scattering, water vapour absorption and cloud reflection and absorption.

Michael J. Iacono, Jennifer S. Delamere, Eli J. Mlawer, Mark W. Shephard, Shepard A. Clough, and William D. Collins. Radiative forcing by long-lived greenhouse gases: Calculations with the AER radiative transfer models. *Journal of Geophysical Research: Atmospheres (1984–2012)*, 113(D13), 2008.