Dear Editor Hannah Cloke,

Thanks for your and all reviewers' recommendations. We have made the necessary corrections as below:

Reviewer 1:

1. Line 159. Not clear. Rephrase: '…was used in this paper, and it was investigated whether…'
   Response: Changed to "Therefore bias-blind assimilation was used for safety and the bias estimation was not handled explicitly. Instead, we investigated whether neutron counts measured by cosmic-ray probe were able to correct for the bias."

2. Line 183. 'in addition'-> 'also'
   Response: Changed

3. Line 192. Rephrase: '…irrigated area where detailed verification data were available'
   Response: Changed

4. Line 212. Add reference or explanation of removal of outliers according to the given criteria.
   Response: Zreda et al., 2012 is added

5. Line 254. Divide sentence in two: '…location. The soil layer…'
   Response: Changed

6. Eqs. (3), (4), (5), (7). Remove multiplication sign 'x' in the equations.
   Response: Removed

7. Line 320. '1 m deep' -> '1 m depth'
   Response: Changed

8. Line 350. Remove '*' and reduce the equation.

   Response: Removed and reduced to $k = -\{0.3 + [0.833(\sin \Phi)^{0.1}]^{14}\}$

9. Line 368. With 10 soil moisture layers in CLM, the state dimension is 10 and not 11?
   Response: The state vector was composed of one vertically weighted soil moisture content and soil moisture content for 10 CLM-layers, so the state dimension is 11.

10. Line 392. Define the matrix I in Eq. (17).
    Response: "where I is the identity matrix" is added

11. Line 417-420. Repetition. Same as in lines 380-384.

Response: lines 380-384 are removed now.

12. Line 433-434. The definition of the last period not clear. All results are shown for the period June-August 2012.
    Response: Changed to "The final CLM states on the 30th of Aug. 2012 were used as the initial states for the 1st of Jun. 2012 for the data assimilation scenarios"

13. Line 448-450. Found in this study or in the works referred?
    Response: Changed to "We found that the differences between daily assimilation and 3 days assimilation were small, therefore only the results of 3 days assimilation are shown." The references were removed in order to avoid confusion.

14. Line 492-493. How is measured soil moisture calculated? As the average of the SoilNet nodes?
    Response: "In this study, the soil moisture for the CRS footprint scale was calculated from the arithmetic mean of the 23 SoilNet soil moisture observations.", it was mentioned already before on lines 286-287.

15. Line 503-504. RMSE only decreased for 10 and 20 cm compared to LST feedback assimilation when CRS neutron counts were assimilated. Not for 50 and 80 cm. Rephrase.
    Response: Changed to "RMSE values at 10 cm and 20 cm depth (scenarios CRS_LST_Par_LAI and CRS_LST_True_LAI) decreased significantly."

16. Line 543. 'little' -> 'slightly'
    Response: Changed

17. Line 613. 'water thickness' -> 'water depth'
    Response: Changed

18. Line 621. 'controlled so' -> 'controlled as'
    Response: Changed

19. Line 636. 'model, these' -> 'model, and these'
    Response: Changed

20. Figure 4. Include 'upper' and 'lower' in figure caption
    Response: Added

21. Figure 5. 'according different' -> 'according to different'
    Response: Changed

22. Figure 7. To be consistent with the other figures use date instead of time step.

Response: Because the land surface temperature observations were not distributed evenly in time, the LAI ensemble members were also not collected evenly in time. Therefore it is better to use the time step instead of the real date.

Reviewer 2:

1. The reference citition is not correct as:
   Xu, T. R., Liang, S. L., and Liu, S. M.: Estimating turbulent fluxes through assimilation of geostationary operational environmental satellites data using ensemble Kalman filter, J Geophys Res-Atmos, 116, 2011. Should be "Xu, T. R., Liang, S. L., and Liu, S. M.: Estimating turbulent fluxes through assimilation of geostationary operational environmental satellites data using ensemble Kalman filter, J Geophys Res-Atmos, 116, D09109, doi: 10.1029/2010JD015150, 2011."
   Response: Changed.