

Actual daily evapotranspiration estimated from MERIS and AATSR data over the Chinese Loess Plateau

By R. Liu et al.

The authors present a case study of estimating latent heat fluxes over the highly heterogeneous Loess Plateau using MERIS and AATSR remote sensing observations. Using most state of the art method (in situ as well as remote sensing) quantification of the turbulent heat fluxes remains highly uncertain. The issues addressed by Authors are very important for the hydrologic and earth science application. Especially, given the large set in situ measurements they have collected. However, in its present form, the submitted manuscript is far from ready for publication. A major issue is the usage of English; chosen words are inappropriate and there are various typos. Moreover, the description of the used methods is incomplete and a total number of 3 figures is an insufficient scientific basis for the paper.

Major issues in the text:

- The paper misses a clear objective; think about what is new??
- What is the difference between LE and ET
- The authors do explain the SEBS algorithm;
- The authors do not show how the H_v and H_g are calculated
- Assuming a sinusoidal diurnal variation is tricky because the evaporative demand changes through time. In the literature often the relative evaporation or evaporative fraction is used.
- The equation of the split-windows technique are not shown and method used to derive the vegetation and soil temperature is missing;
- Also, MERIS and AATSR have different spatial resolutions, how do the authors deal with this?
- Although the authors have collected a very nice in situ data set, they show very little of it. For example how were the conditions prior to AATSR acquisitions?
- Authors mention there is an imbalance in the EC measurements and attribute this to advection without providing any prove. However, they also need considered the measurement uncertain of EC measurements. Imbalance in EC measurements are a common problem and are often resolved by rescaling it using the bowen ratio.
- Scaling issue; Given the surface heterogeneity in the Loess Plateau, I can imagine that authors might want elaborate on that using the in situ and remote sensing measurements.

Some typos I picked up (, but I am sure there are more please check):

P2L2: I think you mean ‘development’

P2L8: ‘senor’ should be ‘sensor’

P2L9-10: mention which algorithm we are talking about.

P3L14: “representative” for what

P3L16: ‘advancement’ should be ‘advances’

R3L27: ‘Pan tested ...’ not properly referenced

P5L11-14: not a straight sentence

P9: units are missing

P13L4: What algorithm are you referring to?

P13L5: ableo should be albedo

P13L15-16: Top of Aerosols >>>>>>>>> top of atmosphere