Comment 1	My main concern is about the interpretation of the obtained discrepancies between MOD16 and SWAT ET estimates. MOD16 and SWAT are certainly very different approaches, but they have in common several input variables including the land cover and meteorological forcings. It is therefore regrettable that the authors did not use the MOD16 input data set for their SWAT simulations.
Reply 1	We acknowledge the concern of the reviewer regarding the interpretation of the discrepancies between the MOD16 and SWAT results. We will therefore rerun the SWAT model with MOD12 Land Cover and a comparison of the results of the difference in the two SWAT model runs relative to the MOD16 will be discussed in the revised manuscript. However, the meteorological forcings, which both model have in common (temperature, humidity and radiation), have a very coarse resolution of 1.0^{o} x 1.25^{o} in MOD16, which is significantly larger than our study area. This GMAO (Global Modelling and Assimilation Office) coarse resolution data which was used in the MOD16 product was resampled using a non-linear fourth order cosine function interpolation technique. Moreover, our philosophy of comparison in this manuscript is to evaluate the standard MOD16 against a 'in a typical way' well calibrated SWAT model on catchment scale and not to reduce the quality and accuracy of our SWAT model, which currently use available 0.05^{o} x 0.05^{o} and 0.01^{o} x 0.01^{o} resolution meteorological data for more accurate results.
Comment 2	Another drawback is that there is no reference (e.g. in situ measurements or reference model runs) for evaluating the comparison between MOD16 and SWAT ET estimates. Therefore, it is difficult to assess the significance of either MOD16 or SWAT ET estimates, especially at the 1 km resolution.
Reply 2	The reviewer's comments regarding a lack of in-situ data or reference model in our study area (complex terrain) is one of the motivations for engaging in this work. There is limited work on evapotranspiration in complex terrain due to difficulty of equipment installation and data retrieval. Hence, our attempt to find a way to gain more confidence in evapotranspiration estimates in such terrain leads us to comparing the comprehensively validated and widely used energy-balance based MOD16 and a properly calibrated water-balance based SWAT model. Our rationale of the graduated scale analysis is that if the products begin to agree at a certain spatial scale, then confidence is placed on such an analysis rather than on either model. Also, this may give an indication of what range of scale a degree of confidence can be achieved when using models to determine ET over a complex terrain.
Comment 3	Major issues : 1) To me "the drivers of the ET algorithm in both models" (one main objective of the paper, stated at line 420) are not evaluated quantitatively. Abstract, Lines 18-20 : "Land cover differences, mismatches between the two methods and catchment scale averaging of input data in the SWAT semi-distributed model were identified as the principal sources of weaker correlations at higher spatial resolution". As different data sets were used as input to both MOD16 and SWAT, the above statement is rather an assumption than an "identification". A

	sensitivity analysis of SWAT model to different forcings (including the MOD16 forcing data) is needed.
Reply 3	We agree that the drivers of the MOD16 ET algorithm have not been quantitatively evaluated and with the constraint of the differences in meteorological forcings, we concede it may be difficult to quantitatively analyse the drivers of the algorithms. We will therefore include the section 5.1.2 (Line 321) in the methodology section. We will focus our objectives on; 1.) To simulate and compare the results of the evapotranspiration of SWAT and MOD16 over a complex terrain in a semi-arid environment on catchment scale 2.) To analyse and determine the spatial scale at which the SWAT and MOD16 ET models tend towards agreement to enhance confidence in ET estimation in a complex terrain We will also include the analysis of the land cover differences between both models after the model rerun using MOD12 land cover in SWAT.
Comment 4	Figure 7 : I am concerned about the significance of the results at 20 and 41 km2 due to the limited extent of the study area. At those scales (which are about the size of the catchment), the differences in ET estimation are attributed to time only, while at the 1 km2 resolution, the differences in ET estimation are attributed to both space and time. Therefore, those statistics are not, strictly speaking, comparable. It is necessary to separate the spatial differences from the temporal differences at all spatial scales. Otherwise no firm conclusion can be drawn. In addition, since aggregation systematically reduces variability, it would make sense to plot side-by-side the difference in mm (as already shown in Figure 7) and the % of this difference relative to the mean ET, for each spatial resolution ranging from 1 to 10 km2
Reply 4	We appreciate the reviewer's comment and can see how this will enrich the discussion section and the study as a whole. In the next version of the manuscript, we will introduce a more rigorous evaluation of the spatial and temporal variance of the two ET results based on the method proposed in Sun et al. (2010) (doi:10.1029/2010GL043323). The grand variance analysis of each of the results will be partitioned into their temporal and spatial variance components. With the spatio-temporal analysis, the causes of the bias will be identified for the various temporal and spatial resolutions. We will include the results in section 4 and the discussion on the spatio-temporal analysis in the section 5 of the manuscript.
Comment 5	Specific points : - Line 110 : define PET, Ecan, Et, Rsoil and Revap in the text to clarify the schematic diagram of Fig. 1 -
Reply 5	We have added the definitions to the manuscript
Manuscript Changes 5	"Where PET is the potential evapotranspiration, Ecan is the evaporation from canopy surface, Et is the transpiration, Esoil is the evaporation from the soil and Revap is the amount of water transferred from the underlying

	shallow aquifer to the unsaturated zone in response to water demand for evapotranspiration.”
Comment 6	Line 311-312 : "The land cover is an important parameter in the MOD16 and SWAT MOD16 ET algorithms as it determines the values allocated to biophysical properties such as leaf conductance, boundary layer resistance and vapour pressure deficit (VPD)" VPD is rather an atmospheric variable than a surface variable controlled by land cover
Reply 6	This has been rephrased
Manuscript Changes 6	“The land cover is an important parameter in the MOD16 and SWAT ET algorithms as it determines the values allocated to biophysical properties such as leaf conductance and boundary layer resistance, which significantly impact ET calculations.”