

## ***Interactive comment on “Combining remote sensing and GIS climate modelling to estimate daily forest evapotranspiration in a Mediterranean mountain area” by J. Cristóbal et al.***

### **Anonymous Referee #1**

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Quantifying ET for a long time period and at large scale remains difficult. The researchers conducted an interesting study that aims at evaluating estimation errors by comparing multiple remote sensing techniques and measured sapflow data for pine forest.

The methods of estimating daily ET are sound and well documented, and the paper is easy to read.

The authors concluded that MODIS data are not appropriate to estimate local ET of a pine forest.

My only concern is the the validation data are not well described and so difficult to

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judge how the models perform. For example, it is unclear what the data points for daily ET in the figures represent. Are they averaged from several days in a month or just for one day. If they are only periodic measurements of sapflow, I would say the validation data are too short to make any conclusions.

In addition, I challenge that daily ET estimated by the energy balance method can be compared to stand level total ET for two reasons 1) Canopy interception, often 10-20% of precipitation, has to be considered unless the comparisons have been made to days, ie,  $ET = T$ ; 2) understory T is minor - the author stated so.

Has the author compared reference ET to sapflow. During wet period, reference ET can be a good guide for estimating forest ET. I suspect the reported ET for a pine forest was too low. No error discussion was made to the measured data.

Also, insights can be drawn from comparison studies when the comparisons are conducted for different seasons when vegetation characteristics vary. It is unclear how long this study has been conducted and at what seasons.

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Interactive comment on Hydrol. Earth Syst. Sci. Discuss., 8, 1125, 2011.

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