

***Interactive comment on “Reference crop evapotranspiration derived from geo-stationary satellite imagery – a case study for the Fogera flood plain, NW-Ethiopia and the Jordan Valley, Jordan” by H. A. R. de Bruin et al.***

**Anonymous Referee #1**

Received and published: 9 September 2010

This paper evaluates the estimations of daily values of reference evapotranspiration (ET<sub>o</sub>) using geo-stationary satellite imagery, using Penman-Monteith ET<sub>o</sub> as reference, in a highland location of Ethiopia and two sites of the Jordan Valley located about 250 m below mean sea level. ET<sub>o</sub> was estimated using a modified radiation equation of the Makkink equation.

On the basis of the subject matter, the paper falls within the general scope of the Journal. Overall the paper was fairly well written and is interested to the Journal readers.

C2211

The abstract is sufficiently informative. The introduction is well elaborated and documented by numerous and significant references. Materials and methods include a very detailed description of the measurements, instruments and methods used in the work. Finally, results and conclusions are sounds and justified by the outputs presented in the paper. However, a moderate revision of the manuscript is necessary in order to accept it for the publication. This revision should consist in the following:

P4928, line 2: the citation Allen et al. (1998) is not in References.

P 4930, equation 3: mm/day, change to mm day<sup>-1</sup>

P 4930, line 13: kPa/°C, change to kPa °C<sup>-1</sup>

P4932, equation 9 and line 12: change LV by I

P4933, line 7: “Choudhury and de Bruin (1998)”, change to “Choudhury and de Bruin (1995)”

P4933, lines 20-22: remove the paragraph “Then alternative .....” because results of the application of the equation proposed by Hargreaves are not presented in the text. Also, it is necessary to remove the reference “Hargreaves et Allen (2003).”

Page 4935, line 3: the citation Mazahreh (1993) is not in References.

Page 4935, line 3: there is a disagreement in the references Shatanawi et al. (1986, 1994) between this page and the References.

Page 4936, line 3: 0.67 °C/100 m, change to 0.67 °C (100 m)<sup>-1</sup>

Page 4936, last paragraph: it is necessary a discussion about the underestimation of ET<sub>o</sub> using sunshine duration instead of solar radiation measurements. Perhaps this underestimation of ET<sub>o</sub> is caused by an underestimation of solar radiation using data of sunshine duration.

Page 4937, line 26: the citation Abreham (2009) is not in References.

C2212

Page 4938, first paragraph: conclusion of this paragraph is not justified. Good estimations of solar radiation from sunshine duration are possible.

Page 4938, line 8: PNFAO-Rs, change to PMFAO-Rs

Page 4938, line 20: the citations Allen (1996) and Allen et al (1996) are not in References.

Page 4938, last paragraph: this conclusion is not true. Accurate measurements of net radiation are possible using a four component net radiometer.

Page 4939, equation 11: change  $L_v$  by  $I$

Page 4939, line 20: the citation Thom (1977) is not in references.

Page 4940, lines 6-7: change Berengena and Gavilan, 2007 by Berengena and Gavilan, 2005.

Page 4940, line 12: change De Bruin et al. (2004) by De Bruin et al. (2005)

Page 4940, line 15: change Eq. (1) by Eq. (2)

Page 4940, line 22: change kPa/K by kPa K<sup>-1</sup>

Page 4941, lines 13-14: this reference is not in the text.

Page 4942: delete de reference Hargreaves and Allen

Page 4943: the references Lecina-Brau and Martinez-Cob (2000), Pinker et al. (2000) and Rubio et al. (2003) are not in the text

Pages 4948 and 4949, Figures 3 and 4: the captions of these Figures are not correct.

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Interactive comment on Hydrol. Earth Syst. Sci. Discuss., 7, 4925, 2010.