This paper is part of an ongoing study developing and demonstrating the need for compensatory root water uptake by plants and trees, for the purpose of more accurately assessing/simulating total actual plant/tree evapotranspiration (ET) under stressed soil water conditions. This paper introduces the reader to the general concept of the Jarvis compensatory uptake (as developed in Jarvis, 1989 and with added information in Jarvis, 2010), and compares the Jarvis with the de Jong and van Lier (2008) model that also accounts for compensatory root water uptake, however, the latter is more detailed in its analytical form, allowing for root water uptake compensation to be controlled by soil type, root density distribution and potential ET. It is this comparison that needs revision, as multiple re-reads of the manuscript with assistance of reading the papers by Jarvis (2010) and de Jong and van Lier (2008) were not sufficient for me to fully understand the compensatory models and their comparison.

Subsequently, the manuscript proceeds by highlighting the differences between the two models (by presenting a specific example simulation, and provides two case studies that demonstrate the need for including root water uptake compensation, both for simple shallow water table case and for a more complex case that shows that compensation of root water uptake is mostly relevant for transition climates between arid and humid.

Specifics comments for section 2 include:

1. The relationship between Eqs. [1] and [2], and subsequent derivations become only clear, if subscripts are utilized to define uptake (S) for each layer i, so Equation [1] must read:

   $S_i = E_p/dz)R_i\ a_i$, clarifying that Eq. [1] applies to each soil layer i. The use of subscripts will have to be followed through in "Eq. [3] as well.

2. Lines 8-10. Statement is not true. The sum of Ra is not equal to w. The value of w is equal to the ratio of Ea/Ep. Would be much better if author provides exact expression for w.

3. The reasoning in line 11 to combine equations 2, 3, and 4 to obtain 5 is not evident to me, though it is intuitively clear.
4. As in comment 1, equations [6], [7], [8], will require layer designation using subscript i, as was consistently done also in the Jong and van Lier paper. Also there is a consistent notation mixup. The root density parameter is defined by both the parameter p and Greek rho symbol.
5. Moreover, the author loosely defines the root distribution parameter, p, whereas it is very specific as defined in Eq. 22 of de Jong and van Lier (2008), and is expressed by a function that includes root diameter and mean root distance between roots. Also, the M in Eq. [6] can only be understood, if one defines it as a rhizosphere-average soil water matric flux potential, which is a function of radial distance from the root surface, as computed from p (see Eq. 20 in de Jong and van Lier).
6. In line 14, it is stated that Mo is constant through the root zone with depth, but it is not , and is a function of root zone depth.
7. Line 19 states that Emax denotes the maximum possible transpiration rate, but it is not, and rather defines the maximum possible soil water supply rate to the root surface. Maybe, it would

be best if a graph is shown, indicating how M increases from the root surface (Mo) outwards, and that Mo becomes zero (M at root surface), under water-limited conditions.

8. Regarding the value of wc (compensation factor), it would be useful for the author to indicate that it is likely plant species dependent, however, the expressions provides do not allow for a plant physiological component to come in, allowing for root water compensation to be plant species dependent.

Comment for section 2:

Not being fully familiar with the de Jong and van Lier concept of root water compensation, I do not understand this case study, demonstrating differences in the two root water compensation models for a case where water is not limited at any time during the simulation period. I was assuming that root water uptake compensation comes only into play if water becomes limited. If so, both models should give identical results. Having reading the de Jong and van Lier (2008) paper, it seems that their model allows for compensation to occur in cases where water is not limited (relative to meeting potential ET demand), and applies root water uptake compensation if the water supply rate to the roots becomes less than maximum (as defined by Emax), irrespective of whether that reduced supply rate is larger than potential ET (i.e. for non-water limiting conditions). It would be important to include a paragraph that state the conceptual mechanisms as such, rather than the reader having to deduce this from the equations.

Comments for section 3 and 4.

Excellent examples. Regarding the last example, I suggest to review and reference the paper by Seneviratne et al. (2010), Earth Science Reviews 99, 2010, 125-161, as it also clearly explains the relevance of soil moisture driven ET for transition climates (in contrast to both humid and arid climates).