

## ***Interactive comment on “Contribution of different grass species to plant-atmosphere ammonia exchange in intensively managed grassland” by M. Mattsson et al.***

### **Anonymous Referee #2**

Received and published: 22 July 2008

General comments: The paper investigated the grass species abundance and different foliar nitrogen pools in a 4-year-old intensively managed grassland. Stomatal compensation points were derived for the 8 most abundant grass species at this site from apoplastic  $\text{NH}_4^+$  concentrations and pH. The authors conclude that there is a good correlation between leaf tissue  $\text{NH}_4^+$  concentrations and gamma values (apoplastic  $\text{NH}_4^+$  concentration - pH ratio). These very valuable data certainly deserve publication in BG. However, for the derivation of stomatal compensation points (Fig. 3) it is important to know the temperature at which the compensation points were derived (as the stomatal compensation point is a strong function of temperature). For this purpose, it would also be nice to see the derived gamma values (temperature independent) in a

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new figure (Fig. 2c).

Comments on the figures: Figure 1: show the positive and negative standard errors in the figure. Figure 2, 3 and 4: show these variables as points (instead of bars) and include positive and negative standard error bars. Use equal units in figure 2 and 4 for easy comparison (as the scale of the y-axis in figure 4 should be about 30 times the scale of the y-axis of figure 2 (p 2590, l 14)).

Specific comments: p 2584, l 13: give the temperatures at which the stomatal compensation points were derived.

p 2586, l 15-20: give reference to experiment overview paper.

p 2587, l 1: remove 'some'.

p 2587, l 9: what does 'blotted dry' mean?

p 2587, l 23: add reference Husted and Schjoerring (1996) to reference list

p 2587, l 24: 't2' is a strange name for the actual canopy temperature. Consider to change it into 'Tcanopy' or 'Tc', which in my opinion is clearer.

p 2588, l 2: 'T2' and 't2' are confusing. Consider to show all equations in K and rename 'T2' or 't2' in 'Tc' (see comment above).

p 2588, l 5: change 'mol' in 'mol<sup>-1</sup>'.

p 2590, l 24: change 'Fig. 2A' in 'Fig. 2a'.

p 2593, l 24: define 'FW' somewhere.

p 2596, l 28-31: move reference to the right place on p 2598, l 6.

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