

Interactive comment on “Nitric oxide and nitrous oxide emission from Hungarian forest soils; link with atmospheric N-deposition” by L. Horváth et al.

L. Horváth et al.

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Response to Anonymous Referee 1

Questions, remarks in general comments:

It is true, NO flux estimation from oak site has high uncertainty but data from spruce and oak suggest: NO flux is negligible (one order less) compared to N₂O. During NO flux measurements generally three ten minute concentration averages were recorded per chamber in the following sequence: background, Ch1, background, Ch2, background Ch8, background and vice versa. Background concentrations were determined by turning upward the upper part of the chamber (lower parts, rims were left permanently in the soil). As to the spatial distribution, we used the same rims as for N₂O, with different cover (with inlet and outlet). A deeper discussion with the relation between

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fluxes and soil parameters will be presented in the next version. For details please see my answers to the referee 3.

Specific comments:

p. 706, l. 1: I will change accordingly: 19° 57' 5" E and 47° 53' 38" N. p. 706, l. 10: The rids (lower parts) of 8 chambers were settled in a line, from 3-4 m distance each other, permanently during the year. The rids were pushed into the soil 4 cm deep. Though there were not visible differences between soil conditions inside and outside the rim, some disturbances in soil moisture can not be excluded. But, we had to avoid the installation of rids before the sampling cause in would have caused sudden, high emissions. p. 707, l. 6: the data were not corrected, the mentioned 24p. 707, l. 23: steady state condition was reached 1-2 minutes after the closure, always checked in the display of NO monitor. Taking into account the volume of chamber with tubing (444 cm³) and the measured air flow rate (327 cm³/minute), air in the chamber changes in every 1.5 minute. Measurement started after the sign has been stabilised (2 min) and 10 minute averages were recorded. p. 708, l. 19: ozone concentration was measured at 5 different heights, from 10 m above the canopy down to the trunk space (at 3 m from the ground). This latter was used and respected as the input concentration into the chamber. (Towards to the soil, especially below 0.5 m the measurement of ozone is disturbed by some materials having UV absorption in the same range as ozone, giving extremely high sign in HORIBA APOA 350E monitor, as our experience shows). p. 709, l. 10: in oak stand there were 4 NO flux measurements 2 in May, 1-1 in June and September. p. 709, l. 17. soil moisture and temperature data will be presented in the second version to BG.

Technical corrections will be made in the next version.

Interactive comment on Biogeosciences Discussions, 2, 703, 2005.

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