



Interactive comment on "Nitrous oxide emissions from a beech forest floor measured by eddy covariance and soil enclosure techniques" *by* M. Pihlatie et al.

Anonymous Referee #3

Received and published: 30 May 2005

The paper 'Nitrous oxide emissions from a beech forest floor measured by eddy covariance and soil enclosure techniques' is in the aims and scope of the BG in particular in biogeochemistry and gas exchange field. This study reveals the possibility to use Eddy Correlation method to estimate N2O soil emissions in the trunk space of a forest and can hence be the substitutive technique to estimate soil forest N2O emission. The scientific methods and assumptions are clearly outlined and the overall presentation is well structured and clear. Nevertheless I have minor's comments about this paper: - Page 583, line 27 I'm not truly all right with the authors. '.. and the EC fluxes are usually measured continuously allowing to obtain information on the temporal variation of fluxes' The automatic chambers allowed also to measure continuously emissions and we are also sure that the measurements are always related to the same areas. 2, S219-S220, 2005

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- Page 584, line 7: The authors indicate that EC method 'has recently 'been used to measured gas fluxes for trunk space but they give just after an old reference E 1986. It's in contradiction Are there more recent references? - Page 585, line 9 In the site description paragraph, the phrase 'the average tree height of the beech trees is 25 m and the diameter 'you must specify that it's the trunk diameter - Page 586, Equation (1). I believe that the definition of the equation terms is insufficient. What are the absorption tube and short reference lengths (Lr, Ls)? . I don't understand the equation and what is the R ratio? Is it possible to have a scheme of the TDL optical pathways? - Page 586 line 15 In the TDL descriptions: The authors don't indicate the sample cell volume it's important to know what could be the sample rate of the atmospheric gas. - Page 586 line 15 and 16 replace l/min-1 with I min-1 - Page 587 line 4 in the paragraph ' EC data processing' the authors indicate that the erroneous data caused by electronic were removed ' It will be interesting to indicate what were the electronic causes of this noise and what were the circumstances of this malfunction. - Page 587 line 24 to determine the flux detection limit the authors give a mean  sW value of 0.15 m s-1. What are the values using to estimate the detection limits during night and day periods. - Page 590, line 12 and table 1 How many fluxes are used to estimate daily coefficients of variation for the manual chamber and how many fluxes are available per day (idem for automatic chamber and EC methods) What does it mean when the authors give (nEC=12-38)? - Page 594, lines 14 to 17. The paragraph starts with an explanation of the relationship between N2O flux and the WFPS increases they give after a description of the tree leave development linked to the fulfilled of the EC method during this period, but what is the link between these two assumptions? - The Figures 3 are to small - For The figures 5 and 6 there is typography problems with the abscise axis labels. The figures are too big compared to the figures 3

Interactive comment on Biogeosciences Discussions, 2, 581, 2005.

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