

# ***Interactive comment on “Comparison of inorganic nitrogen uptake dynamics following snowmelt and at peak biomass in subalpine grasslands” by N. Legay et al.***

## **Anonymous Referee #1**

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The Authors studied nitrogen (N) uptake by plants and microbes at the end of snowmelt period at a field site in the central French Alps. The key research question was to investigate how the N partitioning at snowmelt period differing to the peak biomass period. Authors used  $^{15}\text{N}$  labelling experiment to investigate N at the snowmelt period and used data from a similar  $^{15}\text{N}$  labelling experiment conducted five years earlier at the peak biomass period by Robson et al (2010). Although the science question is interesting and relevant to the scope of Biogeosciences journal, the approach of comparing N dynamics at snowmelt period in 2010 with peak biomass period in 2005 seems not appropriate to justify the extent of generalised discussion in relation to the seasonal differences in microbial and plant N dynamics in subalpine grasslands. The N

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deposition from snow, environmental conditions (temperature, rainfall, wind, humidity etc) of post snowmelt period and the botanical composition of the grassland are key factors for N partitioning at the peak biomass period. None of these were discussed or taken into account for their conclusions.

In general manuscript was difficult to understand and the results presented in the text were hard to follow. The manuscript should have been concentrated mainly on the findings of snowmelt period with a conceptual comparison to peak biomass period using the data of Robson et al (2010). There is repetitive discussion based on speculative pathways illustrated in Figure 5. The Table 2 should be accompanied by the measured averages and the data from Table 1 of Robson et al (2010).

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Interactive comment on Biogeosciences Discuss., 10, 8887, 2013.

**BGD**

10, C3551–C3552, 2013

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