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Interactive comment on "Grazing elevates litter decomposition but slows nitrogen release in an alpine meadow" *by* Yi Sun et al.

Anonymous Referee #2

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This is a very interesting paper. It is worth for publishing and suitable for this journal. The authors investigated the decomposition of litter mix through incubating 'in situ' and across environmental conditions over 800 days, providing significant insight into the general nutrient cycling in the alpine ecosystems. The Introduction has provided sufficient background information for the importance of this work. Experimental design is clear. Data analysis and result presentation are appropriate. The authors have logically discussed and interpreted the main findings. However, I have also made a few specific comments or suggestions to improve this manuscript as outlined below:

Lines 20-21 change 'Incubation site environment had more but litter source had less impact on litter decomposition and N release' to 'Incubation site environment had more impact on litter decomposition and N release than did litter source'.

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Lines 26-27, remove 'in China' in line 26 and allocate after 'major natural pastures' in line 27.

Lines39 and 287,replace 'pastures' with 'grasslands'. As pastures are different from rangelands which include grasslands, shrublands, woodlands and/or wetlands that grow primarily native vegetation and are often less managed, whilepastures are more intensively managed through seeding, mowing and fertilization.

Line 81, change to 'We tested the hypotheses'.

Lines 82 and 83, delete 'whether'.

Line 87, replace 'Qinghai-Tibetan Plateau' with 'QTP' and afterward, as the abbreviationis a commonly acceptable.

Line 105, should GP be '100 m $\times$ 200 m' and GEP be '30 m $\times$ 20 m'? Please check again.

Line 114, change 'litter of different species" to 'litter of different species from each quarter'.

Lines 114-117, you had presented the data of dry weight of palatable and unpalatable species, but it was not clear how you did.

Lines 146-147,did you do the same when measured the dry weight of palatable and unpalatable species? Otherwise it should be mentioned previously.

Lines 151-152, change '. . .small animals (Vaieretti et al., 2013). The small animals were the plateau pika, Ochotona curzoniae (Hodgson) in the present study'to '. . .small animals (Vaieretti et al., 2013), such as the plateau pikaOchotona curzoniae (Hodgson) in the present study'.

Line 153, change 'Three litter bags' to 'Three litter bags from each treatment'.

Line 156, 'a total of 144 packed litter-bags' should be 24 bags/treatment x 4 treatments

= 96?

Line 164, delete 'those'.

Line 170, add the unit of decay rate (k), g/day.

Line 172, change 'a is the initial litter mass' to 'a is the initial litter mass (i.e., 10 g in this study)'.

Line 196, as stated in lines 180-120, should read 'litter collected from GP' as 'GP-litter',and read 'litter collected from GEP' as 'GEP-litter' Please revise in the relevant cases afterward.

Line 211, change 'faster' to 'shorter'.

Line 254, change 'will can in' to 'will result in'.

Line 268, change 'some degree' to 'a certain extent'.

Line 287, change 'applied in' to 'applied to'.

Lines292-295, a recently published paper (Liang et al. 2018. Grass Forage Sci.) could be cited.

Line 296, change 'the the' to 'the'.

Line 310, change 'short periodof time' to 'short period'.

Line 321, I couldn't find such data from the Table 2, but assume that the authors had converted the k unit from g/day to g/year.

Line 332, add 'in litter' after 'remaining'.

Line 337, add 'the' after 'increases'.

Lines345-346, change 'the greater' to 'the greater the', change 'the faster' to 'the faster the'.

Figure 5, please present the Treatments in Fig. 5b but not in Fig. 5a.