Title: Growth characteristics of natural and planted Dahurian larch in northeast China

Dear Prof. Zeng:

Thank you very much for your kind consideration and help to our manuscript! According to your suggestions, we revised our manuscript. All the modifications were listed as follows.

Comment: In section 3.2, it is not suitable to establish the linear H-DBH correlation, because the relationship between mean H and DBH is nonlinear. It is suggested to use the power function H=a*DBHˆb, which is expected with higher Rˆ2 than linear model.

Response: Thanks for your suggestions, the linear H-DBH correlation was revised to power function in Figure 2.

Comment: In the introduction, some newly published papers can be cited, such as Zeng (2015) and Zeng et al. (2017). Also, F. Achard suggested to refer to two other papers, which might be more helpful to readers.

Response: The related important references were cited in in the introduction, e.g. Achard et al., 2006 (Lines 31, 44), Zeng, 2015 (Line 58), Zeng et al., 2017 (Line 58), and Bastin et al., 2017(Line 40).

Comment: Technical corrections Line 40: “is payed” is suggested to be placed with “has being paid”. Line 50: “e.g. tree height, diameter” is suggested to be changed into “e.g. diameter at breast height or DBH, and tree height”.

Response: "forest carbon sink is payed more and more attention" **was revised to** "forest carbon sink has being paid more and more attention" in Line 40. "tree height, diameter" **was revised to** "diameter at breast height or DBH, tree height" in Lines 51-52.

Comment: Line 54-56: Saying “a small quantity of samples” is not suitable for more than 50 (N=83, Wang et al, 2008). Additionally, two papers could be cited here. –Zeng WS. Integrated individual tree biomass simultaneous equations for two larch species in northeastern and northern China. Scandinavian Journal of Forest Research. 2015, 30(7): 594-604. –Zeng WS, Duo HR, Lei XD, et al. Individual tree biomass and growth models sensitive to climate variables for Larix spp. in China. European Journal of Forest Research, 2017, 136 (2): 233-249.

Response: "a small quantity of samples" **was revised to** "increasing samples in recent decade" in

Line 56. "N=50 (Zeng, 2015), N=150 (Zeng et al., 2017)" **was added** in Line 58.

Comment: Line 56-57: Age is suggested to be included here, and DBH be in front of tree height. Line 70-71: Saying “literature and book” is not suitable, because literature includes book; “tree height, DBH” is suggested to be placed with “age, DBH, tree height”, because age is necessary for a growth data set (if the title is not changed), and DBH is more important and easily measured than tree height.

Response: "e.g. tree height, DBH, volume" **was revised to** "e.g. age, DBH, tree height, volume" in Line 59. "literature and book" **was revised to** "literature" in Line 72. "tree height, DBH" **was revised to** "age, DBH, tree height" in Line 73.

Comment: Line 97: “and” is suggested to be followed by “/or”. Line 100-101: “between 40.85_N and 53.47_N; between 118.20_E and 133.70_E” may be better to be changed into “located about 40.85_N-53.47_N and 118.20_E–133.70_E”. Line 113: “old man forest” may be difficult to understand, could we say “over-matured and low-yield forest”?

Response: "and" **was revised to** "or" in Line 99. "low-yield stands in hard environment, e.g. igneous rock forest (Wang et al., 1979), old man forest (Wang et al., 1991)" **was revised to** "low-yield stands in hard environment (Wang et al., 1979; Wang et al., 1991)" in Lines 114-115.

Comment: Line 114-115: “Tree height and DBH” is suggested to be changed into “DBH and tree height” for the above-mentioned reason. In addition, it is better to add “(DBH for quadratic average and tree height for arithmetic average)” in the sentence.

Response: "Tree height and DBH" **was revised to** "DBH and tree height" in Line 116.

Comment: Line 119-120: The order of characteristics needs to be changed as suggestions. Line 136-137: In Table 1, the number of province is 4, not 776; the number of DBH is 697, if including base diameter; and the value of range of Height, DBH, Vtree and Vstand is better to keep three significant digits, e.g., 29.4, 34.9, 936, 975 instead of 29.40, 34.89, 935.73, 975.32, respectively.

Response: "height, DBH" **was revised to** "DBH, height" in Line 121. In Table 1, the number of province was revised to 4 and the number of DBH was revised to 697; the maximum values of Height, DBH, Vtree and Vstand was revised to 29.4, 34.9, 936 and 975, respectively.

Comment: Line 146-147: LY 208-77 was a ministerial standard established by Ministry of Agriculture and Forestry in 1978. Line 148-149: Linear model is not suitable for the relationship between mean H and DBH. Line 158: Fig.2 should be updated with nonlinear model. Line 167:

61 “the” needs to be deleted.

62 **Response:** "Forestry Administration of China" **was revised to** "Agriculture and Forestry Ministry
63 of China" in Line 149. "establish the linear H-DBH correlation (R^2=0.8377, see Fig. 2)." **was**
64 **revised to** "establish the H-DBH correlation with power function (R^2=0.8919, see Fig. 2)" in Lines
65 151-152. Fig.2 was updated with power function in Line 156. "the" was deleted in Line 183.

66 **Comment:** Line 188-189: This reference needs to be revised and move ahead.

67 **Response:** This reference "Agriculture and Forestry Ministry of China: Tree Volume Tables (LY
68 208-77), Standard Press of China, Beijing, China, 1978." was revised and moved to Lines 191-192.

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71 Best regards

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73 Sincerely yours,

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75 Bingrui Jia and Guangsheng Zhou