		IPCC Tier 1		Simple hybrid algorithm (SAH)	
		Mean	SD	Mean	SD
MAPE	AGC (%)	39.75%	23.90%	23.29%***	24.74%
	BGC (%)	122.12%	140.90%	41.84%**	25.15%
	TC (%)	34.32%	23.70%	26.22%·	15.61%
	ANPP (%)	172.38%	250.90%	48.92%**	38.53%
	BNPP (%)	505.34%	635.06%	59.30%*	65.84%
	TNPP (%)	328.44%	390.94%	52.35%*	51.45%
RMSE	AGC (Mg C ha^{-1})	31.84	32.45	14.37***	19.75
	BGC (Mg C ha^{-1})	18.67	22.14	12.96*	13.50
	TC (Mg C ha^{-1})	30.86	33.53	20.03**	24.21
	ANPP (Mg C ha^{-1} yr^{-1})	6.64	10.91	4.48	6.88
	BNPP (Mg C ha^{-1} yr^{-1})	4.16	5.70	3.12	4.22
	TNPP (Mg C ha^{-1} yr^{-1})	13.41	16.97	8.15	10.36
MAE	AGC (Mg C ha^{-1})	27.92	18.83	11.50***	13.61
	BGC (Mg C ha^{-1})	13.90	12.63	11.03***	6.89
	TC (Mg C ha^{-1})	25.08	18.21	16.87*	10.93
	ANPP (Mg C ha^{-1} yr^{-1})	4.11	5.29	3.16	3.22
	BNPP (Mg C ha^{-1} yr^{-1})	3.05	2.97	2.25	2.27
	TNPP (Mg C ha^{-1} yr^{-1})	9.63	9.79	5.79	6.02
ME	AGC (Mg C ha^{-1})	-19.39	27.62	-2.40***	17.70
	BGC (Mg C ha^{-1})	12.02	14.47	-0.45***	13.12
	TC (Mg C ha^{-1})	-11.05	29.18	-3.85	19.91
	ANPP (Mg C ha^{-1} yr^{-1})	3.28	5.86	0.38*	4.53
	BNPP (Mg C ha^{-1} yr^{-1})	3.02	3.00	-0.02*	3.27
	TNPP (Mg C ha^{-1} yr^{-1})	9.63	9.79	3.46	7.74

Table 2. Results of k-fold cross-validation in mean absolute percentage error (MAPE), root mean square error (RMSE), mean absolute error (MAE) and mean error (ME) between benchmark (IPCC Tier 1) and Simple hybrid algorithm (SAH) methods for predicting aboveground carbon (AGC) (n=77), belowground carbon (BGC) (n=39), total carbon (TC) (n=40), aboveground net primary production (ANPP) (n=33), belowground net primary production (BNPP) (n=11), and total net primary production (TNPP) (n=11). Means with different significant codes (*** $p \leqq 0.001$, ** $p \leqq 0.01$, * $p \leqq 0.05$, · $p \leqq 0.1$) indicate that performance of SHA approach is significantly lower than benchmark by one-way ANOVA or Welch's Heteroscedastic F Test depending on that observation is homogeneity or heterogeneity. Red colour presents lower values (higher performance).

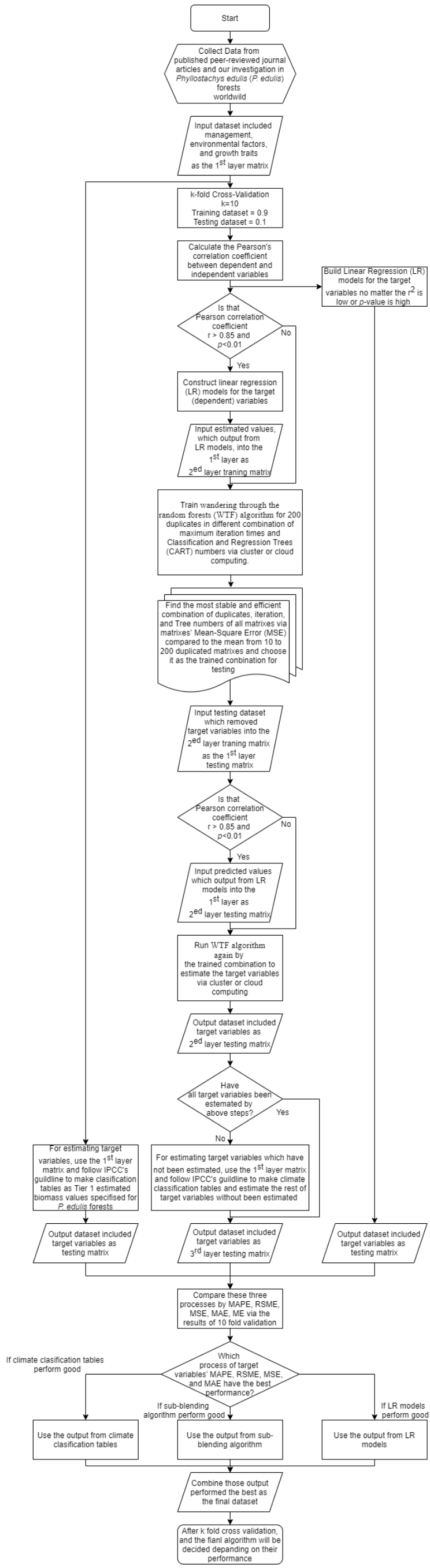

Figure 1. The simple hybrid algorithm for estimating carbon stocks and sinks in forests. This figure was designed and obtained by Simon Chen, Dian Rong Li, and Shitephen Wang using Diagrams.net (JGraph Ltd).

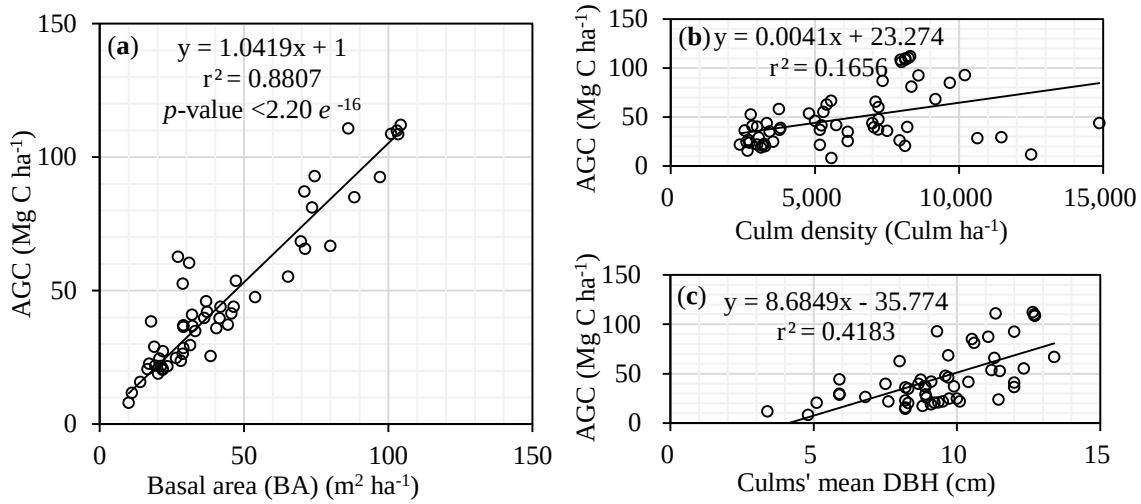

Figure 2. Correlation between aboveground carbon (AGC) stocks and some independent variables used in Moso bamboo forest worldwide. (**a**) Correlation between AGC and basal area (BA). (**b**) Correlation between AGC and culm density. (**c**) Correlation between AGC and culms' mean diameter at breast height (DBH).

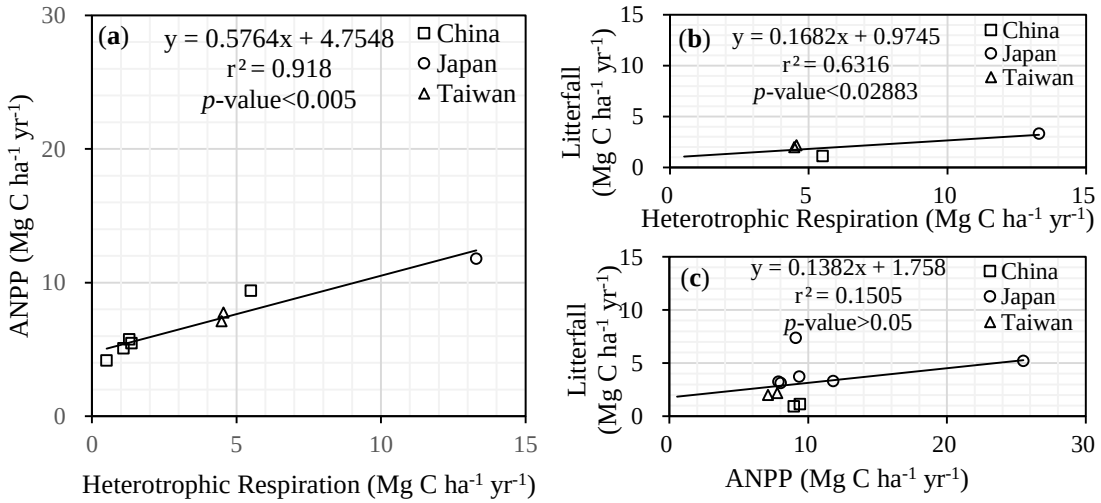

Figure 3. Correlation between aboveground net primary production (ANPP), heterotrophic respiration (HR), and litter fall. (**a**) Correlation between ANPP and HR. (**b**) Correlation between litter fall and HR. (**c**) Correlation between litter fall and ANPP.

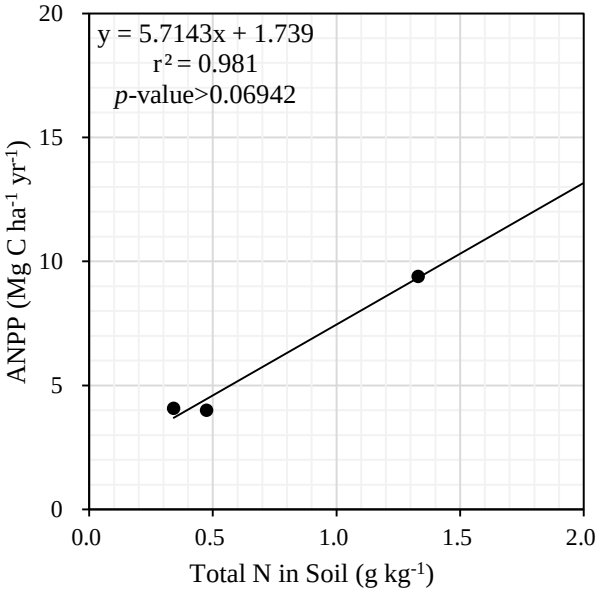

Figure 4. Correlation between total nitrogen in soil and aboveground net primary production (ANPP).

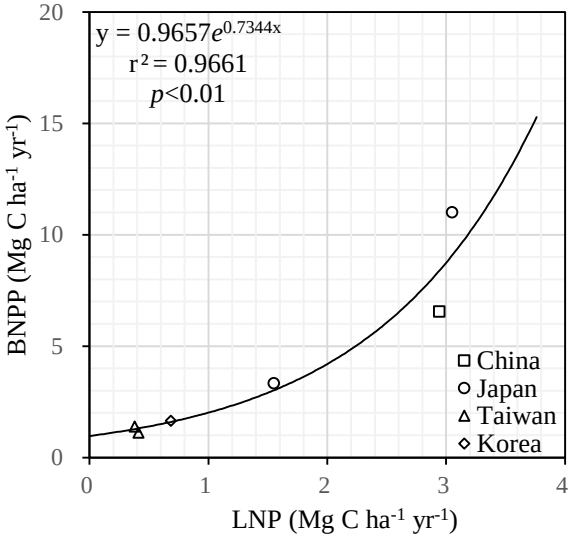

Figure 5. Correlation between leaves' net production (LNP) and belowground net primary production (BNPP).

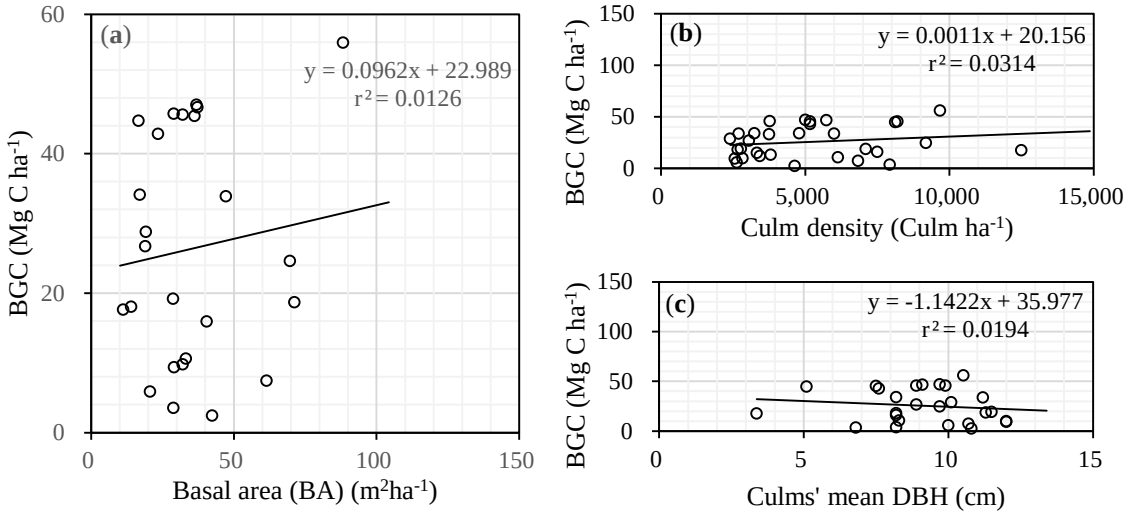

Figure 6. Correlation between belowground carbon (BGC) stocks and some independent variables used in Moso bamboo forest worldwide. (**a**) Correlation between BGC and basal area (BA). (**b**) Correlation between BGC and culm density. (**c**) Correlation between BGC and culms' mean diameter at breast height (DBH).