**Supplementary Materials**

**Figure S1:** Mato Grosso dry forest (MAT), Tapajós-Xingu moist forest (TAP), and Chocó-Darien rainforests (CHOCO). Five regression models were exanimated: random forest (RF), multivariate adaptive regression splines (MARS), liner regression (lm), Lasso and Elastic-Net Regularized Generalized Linear Models (GLM.net), and Support Vector Machine (SVM). Three groups of SAR and multispectral predictors also were evaluated: the first group formed by the 20 predictors variables (Vars.1), the second by 14 predictors that had significant correlations (significant $r$ >0.2 or k>0.2) to the CH (Vars.2) (see Table 3), and the third group by no-collinear predictors with significant correlations (significant $r$ >0.2 or k>0.2) to the CH (Vars.3).

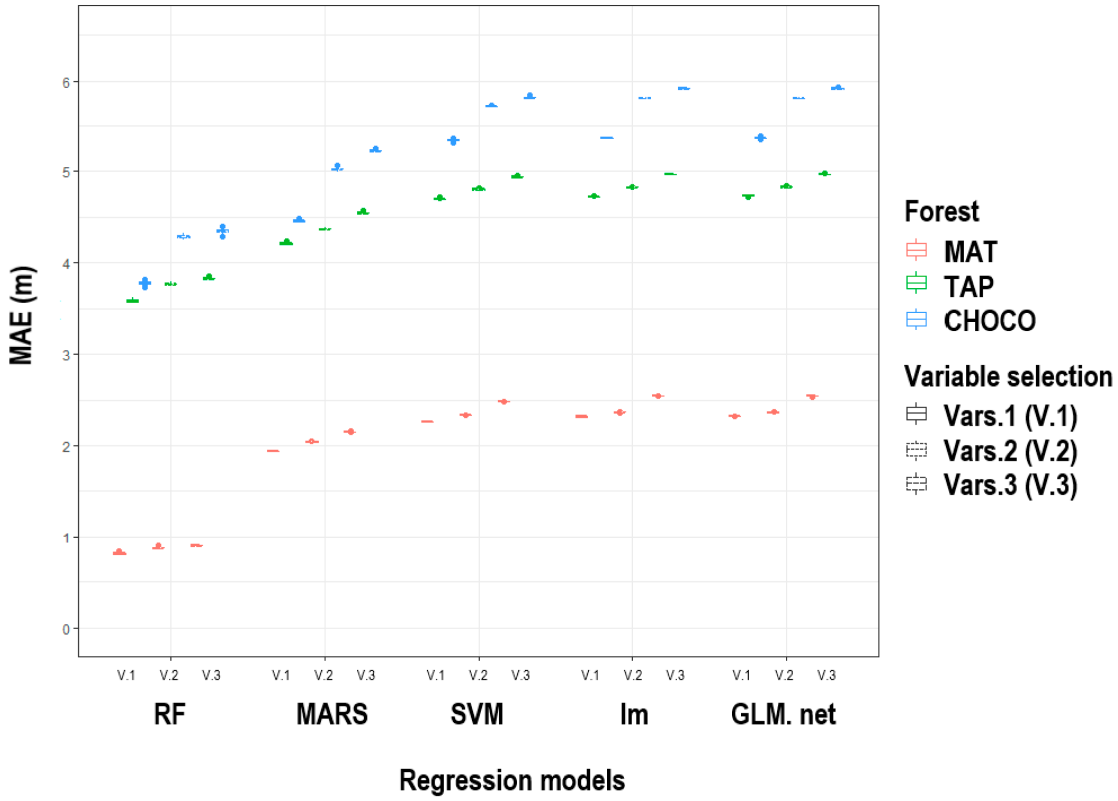


**Figure S1.** Accuracy of the map models estimated as MAE (Mean Absolute Error) in three tropical forests.

**Figure S2:** Mato Grosso dry forest (MAT), Tapajós-Xingu moist forest (TAP), and Chocó-Darien moist forests (CHOCO). Ten predictors were evaluated: four bands of Landsat-8 (SWIR1, SWIR2, Thermal1, and Thermal2), two vegetation indices (EVI and NDVI) estimated from Landsat-8, two polarizations of the band L estimated from ALOS-2-PALSAR, and two polarizations of the band C estimated from Sentinel-1.

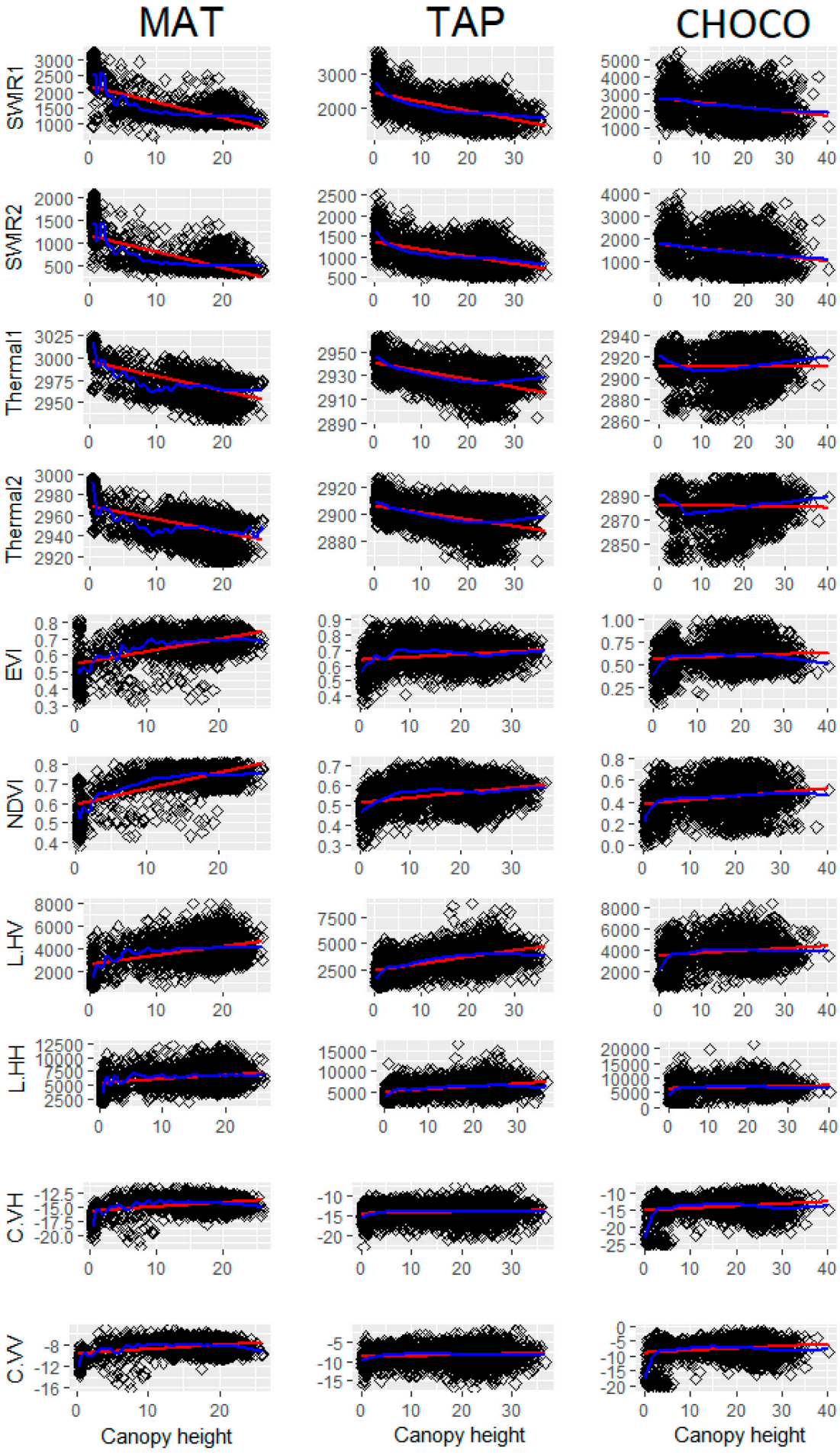
MAT
TAP
CHOCO
SWIR1
SWIR2
Thermal1
Thermal2
EVI
NDVI
L.HV
L.HH
C.VH
C.VV
Canopy height
Canopy height
Canopy height

**Figure S2.** Linear and nonlinear correlations between canopy height (CH) and X-means of multispectral and SAR predictors in three tropical forest.

**Figure S3:** Mato Grosso dry forest (MAT), Tapajós-Xingu moist forest (TAP), and Chocó-Darien rainforests (CHOCO). Correlation of four are showed: two vegetation indices (EVI and NDVI) estimated from Landsat-8 and two polarizations of the band C estimated from Sentinel-1.

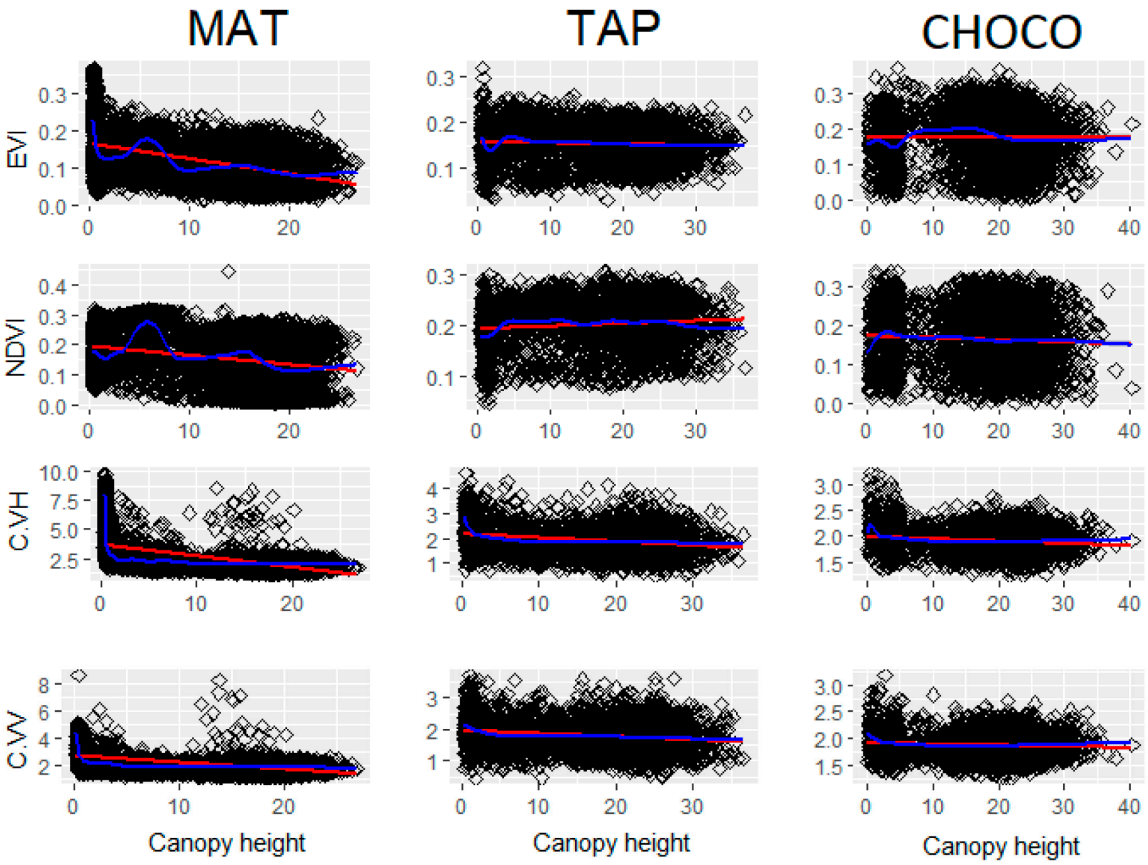


**Figure S3.** Linear and nonlinear correlations between canopy height (CH) and X-SDs of multispectral and SAR predictors in three tropical forest.