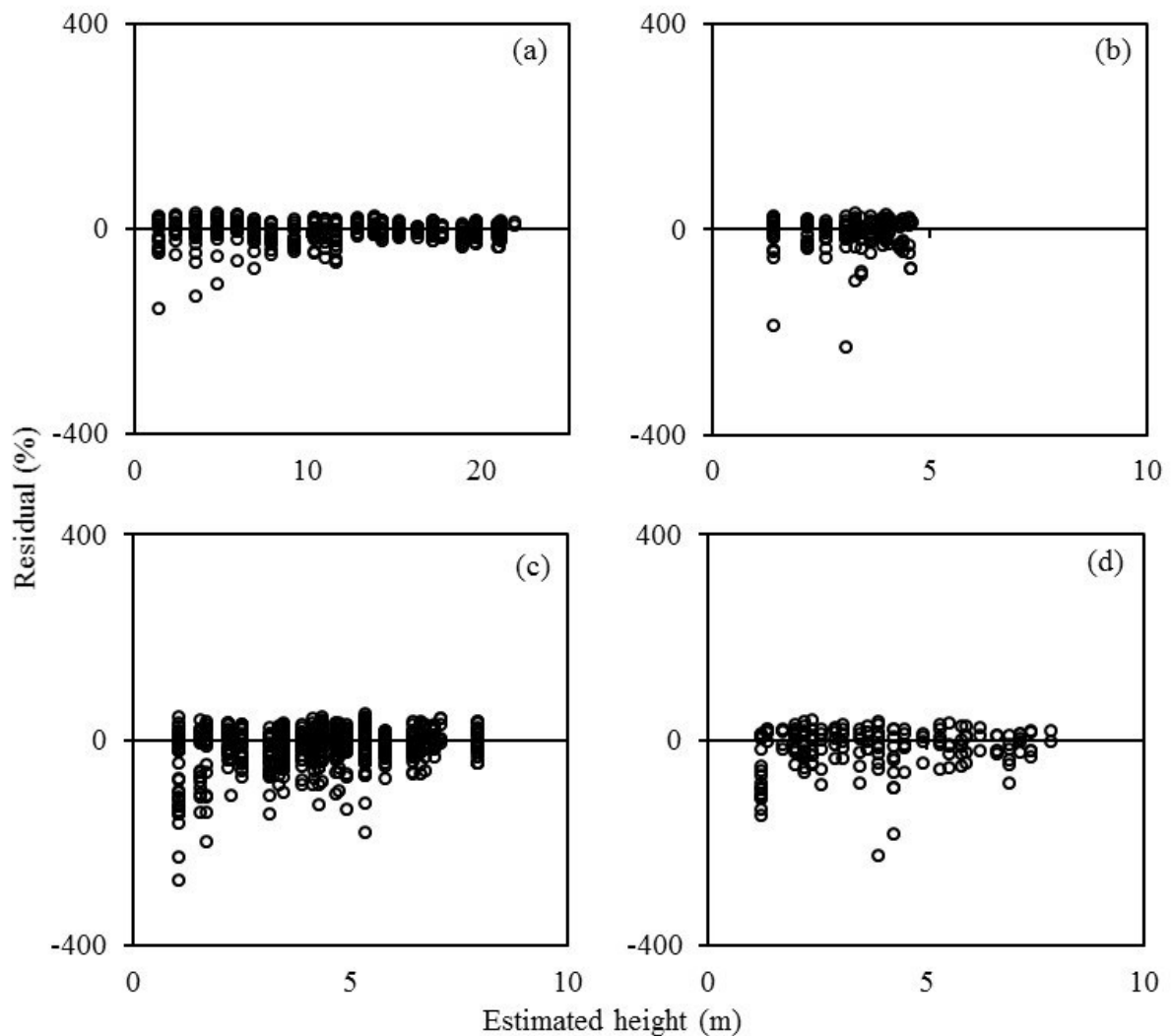


Supplementary Material

Fig. S1 – Residual distribution (%) obtained by fitting the modified models for *Eucalyptus urophylla* x *Eucalyptus grandis* (a), *Mimosa scabrella* (b), *Parapiptadenia rigida* and *Peltophorum dubium* (c) and *Schizolobium parahybae* (d) in order to describe the height growth depending on the tree age and climatic factors.



Tab. S1 – Height models tested for *Eucalyptus urophylla* x *Eucalyptus grandis*, *Mimosa scabrella*, *Parapiptadenia rigida*, *Peltophorum dubium* and *Schizolobium parahybae* in Rio Grande do Sul State, Brazil.

Author	Model	Number
Schumacher	$h = \beta_0 e^{(\beta_1 A^{-1})} + \varepsilon$	(2)
von Bertalanffy-Richards	$h = \beta_0 (1 - e^{-\beta_1 A})^{[(1-\beta_2)J^1]} + \varepsilon$	(3)
Clutter-Jones	$h = \beta_0 (1 + \beta_1 A^{\beta_2})^{\beta_3} + \varepsilon$	(4)
Prodan	$h = \frac{A^2}{(\beta_0 + \beta_1 A + \beta_2 A^2)} + \varepsilon$	(5)
Bailey with 4 parameters	$h = \beta_0 (1 - e^{\beta_1 A^{\beta_2}})^{\beta_3} + \varepsilon$	(6)
Mitscherlich	$h = \beta_0 (1 - \beta_1 e^{-\beta_2 A}) + \varepsilon$	(7)
Gompertz	$h = \beta_0 e^{(-\beta_1 e^{(\beta_2 A)})} + \varepsilon$	(8)

h = height, in m; β_0 , β_1 , β_2 and β_3 = model parameters; e = base of the natural logarithm; A = age, in months; ε = random error.

Tab. S2 – Biological models of tree height growth modified by the inclusion of climatic factors.

Species	Model	Number
<i>E. urophylla</i> x <i>grandis</i>	$h = (Prec^{\beta_0}) (Tmin^{\beta_1}) \beta_2 (1 - e^{-\beta_3 A}) \left[\frac{(1 - \beta_4)^J}{1 - \beta_4} \right] + \varepsilon$	(9)
<i>M. scabrella</i>	$h = (Prec^{\beta_0}) (Tmin^{\beta_1}) \beta_2 (1 + \beta_3 A^{\beta_4})^{\beta_5} + \varepsilon$	(10)
<i>P. rigida</i> and <i>P. dubium</i>	$h = (Prec^{\beta_0}) \beta_1 (1 - e^{-\beta_2 A}) \left[\frac{(1 - \beta_3)^J}{1 - \beta_3} \right] + \varepsilon$	(11)
<i>S. parahybae</i>	$h = (Prec^{\beta_0}) (Tminabs^{\beta_1}) \beta_2 e^{(\beta_3 e^{(\beta_4 A)})} + \varepsilon$	(12)

h = height, in m; Prec = precipitation, in mm; Tmin = minimum temperature, in °C; Tminabs = absolute minimum temperature, in °C; $\beta_0, \beta_1, \beta_2, \beta_3, \beta_4,$ and β_5 = model parameters; e = base of the natural logarithm; A = age, in months; ε = random error;