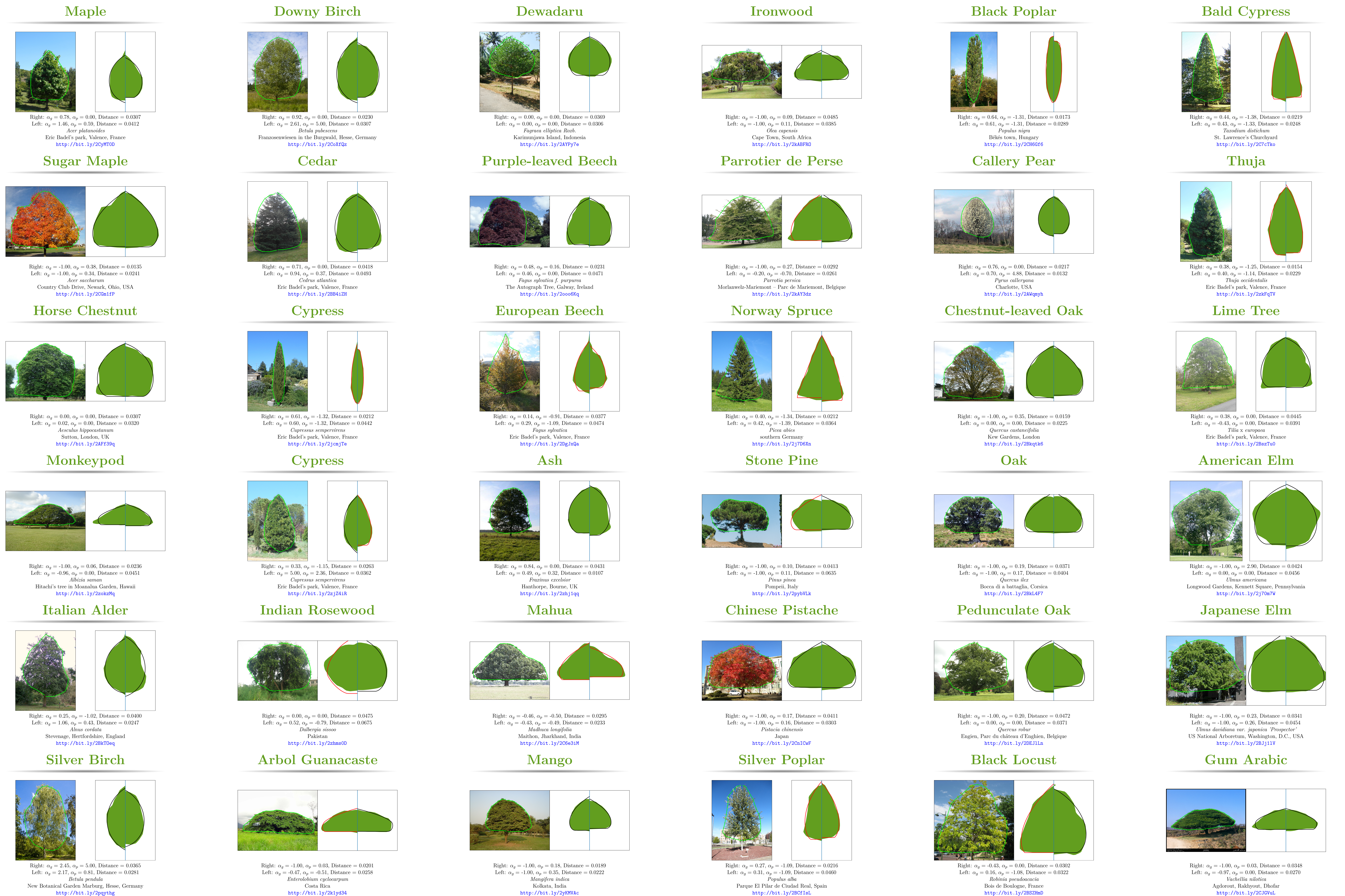


Tree crowns grow into self-similar shapes controlled by gravity and light sensing

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Comparison between tree crown shapes and front propagation model. For each species, we first hand-pick the contour from the right side of the picture on the left (green line). This contour (green shape on the right) is then fitted with the model (black or red curve). Then, the same operation is made on the left part of the picture. The quality of the fit is defined by the distance d , given by Eq. (10) in the main text. The two sets of parameters correspond to the right and left fit. When we could find a gravitropic intensity α_g and a phototropic intensity $\alpha_p > 0$, such that $d < 0.05$, a black contour is used to draw the theoretical shape, a red curve otherwise. For each tree, we also compute the Fréchet distance between the left and right fits d_{LR} . Although some trees show large discrepancies between left and right values of (α_g, α_p) , the mean value of this distance d_{LR} over the 36 trees is low (0.031817), which is in favour of the axis-symmetry.