



Sébastien is currently a 3rd-year PhD student at UMR EcoFoG – CNRS, Kourou, French Guiana. Working on tropical tree hydraulics, he is interested in linking anatomy to hydraulic traits to drought resistance.

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Diversity of the vascular and hydraulic architectures of the leafy shoot of tropical trees

presented by

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ABSTRACT

Hydraulics applied to plants are now an essential tool (i) for a better understanding of the ecology of tropical trees, and (ii) for the issue of plant drought resistance in a warming Amazonia. However, knowledge on hydraulics of tropical trees remain quiet limited. Within the tree, the leafy shoot is a keystone structure, since it represents on few centimetres the stem-leaf-atmosphere interface, it concentrates the largest water stress within the tree, and it concentrates most of active meristems for the future crown. In order to have a better understanding of the structure of the leafy shoot, its hydraulics, and the variability across different tropical tree species, I focused for my PhD on the following questions:

1. How do anatomies, vasculature, and mechanics, underline the leaf size-stem size spectrum within the leafy shoot?
2. What are the anatomical determinants of xylem drought-induced embolism in distal stems?
3. Hydraulic segmentation and vulnerability segmentation at the leaf-stem interface: are they coordinated?
4. How do hydraulic traits determine drought resistance –as desiccation time- of the leafy shoot?

KEY WORDS

French Guiana, hydraulics, vasculature, leafy shoot, functional trait

Invited and animated by:

Dr. Patrick HEURET (UMR AMAP)

Type:

Research results

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