

# School of Earth and Environmental Sciences

## Colloquium Series

**Dr. Caio Mattos**

**Postdoctoral Researcher, Princeton University**

Wednesday, February 8<sup>th</sup>, 2023

12:15 – 1:30 PM

Science Building

Room C-207

### **The good and bad of a shallow water table in tropical ecosystems**

The shallow water table in river valleys has long been associated with positive impacts in vegetation, providing a stable water source through the dry season and buffering plants from extreme droughts, such as the 2015 El Niño drought in the Amazônia rainforest. This stable water access comes at a cost, with waterlogging (water table within the plant rooting zone) demanding special adaptations of plants in these topographic positions. In this talk I'll explore how both the positive (drought avoidance) and negative (waterlogging) effects of a shallow water table shape vegetation distribution in South America and change the resilience of the Amazônia rainforest to droughts. I will show how plants are capable to adapt to both endmembers of stress - constant drought or waterlogging - but suffer when exposed to both, with clear effects on forest-savanna coexistence and predictions of shifts in forest distribution under a warmer climate.



Dr. Caio Mattos in the field

#### **Brief Bio:**

Caio Mattos works in the interface of ecology, hydrology and earth system modeling. His interests range from studying plant ecophysiology in the field to better representing soil-plant-atmosphere feedback in global models.

**\*\*HYBRID SESSION\*\***

Zoom link for remote attendance:

<https://us02web.zoom.us/j/82229858276?pwd=UkNzM2FNY2p6cG42YjBmeHg0dGxNdz09>

Meeting ID: 822 2985 8276

Passcode: 515589