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ABSTRACT SUBMISSION

Title: **Biomass and Carbon shifts in the Atlantic Forest based on forest type and fragmentation**

Abstract No. 0321

Title *Biomass and Carbon shifts in the Atlantic Forest based on forest type and fragmentation*

Abstract

The Brazilian Atlantic forest has been reduced to remnants constituting only 12% of its original extent. Because of the extensive fragmentation, any climatic change can affect its stability. Using a database of structure and floristics of trees, we estimated above ground biomass (AGB) at a regional spatial scale for the Atlantic Forest biome for both seasonal dry forest (18 fragments) and also rainforest (10 fragments). We aimed to assess whether there is a spatial variation in AGB and carbon stock in Atlantic forest fragments dependent on factors related to forest type (climate) and fragmentation (fragment size). It is expected that: (1) rainforest present higher biomass than dry forest; (2) smaller fragments has less biomass than larger fragments.

The AGB of the rainforest was 100 tons higher than the dry forest values. Rainfall and seasonality are the main determinant of the type of forest in the Atlantic region, in addition it is known that the dry tropical forests are ecologically and floristic distinct to rainforest. Therefore, a specific dynamics of carbon storage in trees was expected. Our results are in agreement with previous reports of a diminishing in biomass in smaller fragments of Atlantic forests, as a direct effect of fragment size. However, this relationship was not verified considering dry forests fragments alone, which have a more intense degradation, that can be a change factor of trees biomass, hiding the edge effect of the fragment. In the context of this research, one question was addressed: In which sense fragmentation intensifies climate action? The resilience of tropical forest fragments to climate change is unclear, but this research will enable to make more accurate predictions of carbon balance at a large spatial scale for the Atlantic Forest biome in the future.

Permission Yes

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