



José Julio Toledo | [Sair](#)

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**Resumo # RS39912B**

Status: Aprovado (Pôster)

Dados gerais	
<b>Área</b>	02 - Community Ecology & Function
<b>Título do simpósio</b>	FS04 - Community ecology & function
<b>Prêmio</b>	Nenhum
<b>Tipo de Apresentação</b>	Pôster

**Resumo**

**By shifting species and traits, soil controls biomass and dynamics of an Amazonian forest**

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The effects of soil on tree species composition and trait distributions in tropical forest, and how these interactions affect tree biomass and dynamics, are poorly understood because variation in soil is confounded with variation in climate over large areas. We excluded confounding due to climate by studying variation among 72 1-ha plots within 64 km<sup>2</sup>, and minimized within-plot variation in soil and stand properties by using long narrow plots oriented along altitudinal contours in Reserva Ducke, Central Amazonia, Brazil. Soil variation caused shifts in tree species composition, which determined stand-level wood density. Soil clay content, plot mean wood density and one-dimensional ordination of tree species composition explained up to 40 % of variation in tree biomass and 19 % of variation in tree mortality. As pioneer species were not abundant, lower biomass and higher mortality on sandy soils is a consequence of dominance of species with low to medium wood density adapted to waterlogged and nutrient-poor sandy soils. Therefore, mesoscale variation in biomass and dynamics is caused by co-occurrence of species with similar traits in different regions of the edaphic gradient. Identification of mechanisms controlling tree biomass and dynamics in Amazonian forest will require better understanding of tree-soil physiologic interactions.

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