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E I N L A D U N G

zum

V E R A - S E M I N A R

von

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Obtaining age distributions from $\Delta^{14}C$ values in open systems: applications in the Amazon rainforest

The Amazon rainforest is an ecosystem with a considerable impact on the mitigation of climate change. It stores the equivalent of about half of the amount of carbon in the atmosphere before the Industrial Revolution. However, its potential might be impaired by exploitative human activities. In order to monitor on a long-term basis the possible changes of carbon cycling in the Amazon, the Amazon Tall Tower Observatory (ATTO) is operated since 2015 about 150 km north of Manaus.

Studies performed in the Amazon Basin in the past decades give us the current results of carbon stocks and fluxes. Nevertheless, we still lack accurate estimations of how long the forest keeps the captured carbon. To fill this gap, my PhD project focusses on coupling two powerful tools: radiocarbon measurements and the theory of compartmental dynamical systems. The former, expressed as $\Delta^{14}C$, is a proxy for the compartment (i.e. canopy, tree stems, roots, etc), which is relatively easy to determine; whereas the latter gives us estimations of ages and transit times of carbon through fairly simple models. Thus, in my talk, I show the theoretical aspects of radiocarbon in open systems, how to convert $\Delta^{14}C$ in ages within this framework, and how the ATTO infrastructure is essential to corroborate these results.

Donnerstag, 30. Januar 2020, 16:30 Uhr

1090 Wien, Währinger Str. 17, "Kavalierstrakt",
1. Stock, Victor-Franz-Hess Hörsaal

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