

iFAST: The International Forum on Advanced Environmental Sciences and Technology

A series of distinguished seminars by eminent scientists

8 a.m. CDT, 9 a.m. EDT; 1 p.m. GMT, 9 p.m. China

Wednesday, March 22, 2023



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S. Trumbore is director of the Processes Department at the Max Planck Institute for Biogeochemistry in Jena and part-time professor of Earth System Science at University of California, Irvine. Trumbore studied geology and obtained her doctoral degree in geochemistry from the Lamont Doherty Earth Observatory of Columbia University. Her research uses radiocarbon produced by nuclear weapons testing to trace the flow of carbon through vegetation and soils. She also is interested in tropical ecosystems and helps lead the Amazon Tall Tower Observatory, a Brazilian/German project to study land-atmosphere-climate interactions in central Amazon tropical forest. Trumbore is a member of National Academy of Sciences, and the founding editor-in-chief of the new open-access journal *AGU Advances*.

Radiocarbon constraints for the terrestrial carbon cycle

Many of the largest uncertainties in terrestrial carbon cycle models are traceable to poor understanding of how long it takes the C fixed by plants to return to the atmosphere through respiration and decomposition. Key unknowns in controlling ecosystem C transit times include plant allocation of fixed C to respiration, storage and growth and how litter characteristics, soil biota, climate and mineralogy determine how long C added to soils persists. Because of the global release of 'bomb' ^{14}C by atmospheric weapons testing, the C fixed each year since 1964 has a unique ^{14}C signature that provides information on the time elapsed as C cycles through plants and soils. This talk will give examples of how tracing bomb ^{14}C can teach us something new about tree ecophysiology and the factors that control transit times of C in soils and provide an important constraint for C cycle.



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Zoom webinar ID: 934 8142 2012 (zoom.us/j/93481422012)

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