

## **RADIOCHRONOLOGY AND CARBON PRESERVATION IN BRAZILIAN SEDIMENTARY RECORDS**

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The study of radionuclide deposition into lake sediments provided an assessment of paleoclimatic changes that influence the ecosystems during the geologic time. Besides, the determination of organic carbon fluxes and its preservation have great importance as carbon cycle and global change guides.

In the present study, we aimed to compare two different time scales and hydrodynamic systems in a carbon preservation basis. Lacustrine sediment samples from the Northern Amazon and the Mogi-Guaçu floodplain-river system were dated by  $^{14}\text{C}$  ( $T_{1/2} = 5500$  years) and  $^{210}\text{Pb}$  ( $T_{1/2} = 22$  years), respectively for the last thousands and hundred years, to derive sedimentation rates. It was also measured the Total Organic Carbon, Total Nitrogen and  $^{13}\text{C}/^{15}\text{N}$  isotopic ratios.

Due to the remarkable seasonal variation of carbon production, the TOC preservation rate showed values ranging between 0.5-14 % for the Amazon lakes and 12-35 % for the Mogi-Guaçu floodplain lakes. The latter are considered as sinks for carbon, associated with the paleohydrological change of the river. The young tropical floodplains seem to provide continental pools that may play a significant role for the current climatic budget. On the other hand, it was observed sudden sedimentation changes in the Northern Amazon area, during the period between 8000 and 7000 cal. years BP. These changes were related to dry climatic events, which occurred between the early and middle Holocene, leading to stop sedimentation and degrade carbon in the catchment. These findings underline the importance to address carbon stocks from different records to estimate potential carbon degradation in several time scales and resolutions.